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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
End of Series
Old Ballplayers Never Die
Scoop! Confidential!

Stories of the Week

Regular at the Business Men's Blue Plate Luncheon Special table seemed downcast and sorrowful. Jollied another faithful luncheoneer:

"What can we do for you? Lend you money, a sympathetic ear, or what?"

"You name it," lugubrioused the fellow, "and you can't miss. Whatever you can think of, I need it."

Among the untoward misfortunes which befell the Cincinnati Redlegs this season was Gerry Lynch's accident in Chicago.

He sleep-walked in the Conrad Hilton hotel, and injured his knee on a room air conditioner.

Bendix-Westinghouse Co.
Evansville, Ind.

Editor:

As an ardent baseball fan, I know you will be interested in an unusual air conditioning installation which has just been completed at the Yankee Stadium. I refer to the home team dugout, which has been completely air conditioned by Edison Cooling Systems, Inc., of New York City.

I recently had occasion to visit this installation on one of those miserably uncomfortable summer days for which New York City is famous, or should we rather say infamous. Although the playing field was drenched with heat and humidity, the dugout was as cool and comfortable as the most modern air conditioned movie house. And not a breeze in evidence to impair the efficacy of the most sensitive pitching arm.

Much credit must be given to the engineering personnel of Edison Cooling Systems for their imagination and originality in effecting this unusual installation.

SAM MONCHER,
Regional Mgr.

P.S. I do not mean to infer that any of the equipment used in this installation was furnished by Bendix-Westinghouse.

End of Series

And with that, plus the following anecdotes, we close the season on baseball. (Hope you enjoy the stories which follow.)

"I knew I was all washed up," reminisced Preacher Roe, "when a fast ball got away from me and headed for Stan Musial's head.

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Mr. Small Businessman:

Research Help May Be on Road

By George F. Taubeneck

WASHINGTON, D. C.—So you, Mr. Small Businessman, feel it's tough to compete with Big Business—because it can afford laboratories, engineering and marketing research scientists—and you can't.

Maybe there's help on the road for you. President Eisenhower recently called a Conference on Technical and Distribution Research for the Benefit of Small Business. Big idea: there's a lot of technical and marketing information available at low cost if little businessmen only knew where to get it and how to use it. Problem of the conference was to open this keg of nails.

Ike was there briefly (he was called away by something going on in Arkansas). At the other end of the scale were this reporter and several other Joes named George. In between these two extremes were men from every conceivable type of "small" business, plus a passel of professors and association

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1, 2-Hp. Compressor Shipments Rise In First Half of '57

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies during the first half of 1957 were slightly below comparable shipments reported in the same period of 1956, Geo. S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute reports.

The figures are based on reports to ARI by companies whose output of compressor bodies is estimated to represent more than 95% of the U.S. total production. They do not include shipments of bodies produced for use in household refrigerators.

While the over-all total of compressor bodies shipped was below last year, certain sizes and categories of compressors showed sharp increases, notably 1 and 2-hp. compressors and those designed for use in automotive air conditioning. The over-all decline was about 3%.

Total shipments for the first six months of 1957 amounted to 2,710,680 bodies, compared with 2,804,517 in the same period a year earlier.

Shipments of compressor

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Heating Section Starts on Page 16

Ask Utilities OK 1 Hp. on 115 V.

CINCINNATI—A change in present utility regulations regarding the installation of 1-hp. motors on 115-volt circuits was called for at the 22nd annual conference of the International Association of Electrical Leagues here.

"The room air conditioner industry feels that many utility company regulations (including this one) are inconsistent and out-of-date with industry achievements, and I think that every one will agree with this position," declared W. G. Hills, managing director of the Electrical Institute of Washington.

"The majority of these regulations," he said, "require all

(Concluded on Page 21, Col. 1)

Room Unit Mfrs. Agree on B.t.u.h. Ratings for '58

WASHINGTON, D. C.—Manufacturers of almost all of the room air conditioners made in the U.S. will again publish capacity ratings of their products in terms of B.t.u. per hour in 1958, the Air-Conditioning & Refrigeration Institute has been assured.

A recent meeting of ARI's Room Air-Conditioner Section expressed satisfaction over the operation of the rating publication program in 1957, the first year it was attempted, and the manufacturers present, representing more than 90% of the nation's output, said they would publish the ratings again next year.

In preparation for continuance of the program in 1958 the makers agreed to test and rate under the ARI Standard, to publish ratings in consumer literature available from deal-

(Concluded on Back Page, Col. 1)

NCRSA Reports 6-Mo. Sales Up Over '56 Period

PHILADELPHIA — Results of the regular quarterly survey of business among members of the National Commercial Refrigerator Sales Association indicates that, on the average, business was only a little under 1956 during the second quarter, while for the first six months, sales were slightly ahead of the first half of 1956, NCRSA reported.

For the first half of this year, the average total dollar sales among those participating in the survey were 1.61% ahead of the 1956 figure for the period. Total dollar sales in the second quarter of 1957 were 3.33% below the 1956 figure. Net profit before taxes for the second quarter decreased 1.08% from last year.

Inventory as of June 30, 1957, showed a decrease of 3.82% as compared to 1956, and accounts receivable as of June 30 were up 7.12% over the 1956 figure.

2 Kelvinator Refrigerator Lines Set

To Offer Built-In, Free-Standing Styles

DETROIT — Two lines of household refrigerators, representing two entirely different concepts of styling and interior features, will be offered by Kelvinator Div., American Motors Corp. for 1958.

Kelvinator is currently presenting the first of its two lines, called the "Contemporary" line, at factory branch and distributor meetings from coast to coast along with a new "short line" of electric ranges.

The second, or "Stylemark" line will start production in December.

Kelvinator officials said that wholesale prices on the refrigerator and range lines would be 3 to 5% higher than on comparable models last year. Distributors and factory branches will establish retail prices according to local conditions.

Why two refrigerator lines? Homer L. Travis, vice president in charge of Kelvinator sales, believes it is a "common sense approach to the realities

(Concluded on Page 4, Col. 1)

Norco Plans Gas Refrigerators

LOS ANGELES—Norco, Inc. here will begin marketing a line of gas refrigerators to the general consumer field early in 1958, according to Norman H. Lee, president.

For the past four years Norco has been a supplier of refrigerators to the trailer and LP-gas markets.

Remarking on the new program, Lee stated: "This is a tremendous challenge we are accepting—that of filling the great void recently created in the gas refrigeration field."

The new Norco line will consist of 2, 4, 7, and 10.5-cu. ft. sizes in both natural and LP-gas models.

Groups Plan Convention Programs for ARI Exposition Time

ASRE

NEW YORK CITY — Four conferences on air conditioning or refrigeration, three technical sessions, six forums, and an inspection trip to Argonne Laboratories of the Atomic Energy Commission are tentatively scheduled for the American Society of Refrigerating Engineers' 44th semiannual meeting set for Hotel Shoreland in Chicago Nov. 14-16.

To be held just prior to the 10th Exposition of the Air Conditioning and Refrigeration

(Concluded on Page 21, Col. 1)

NCRSA

PHILADELPHIA — The theme, "Promoting of Value of Distributors' Services," will be emphasized and developed in many ways by speakers scheduled for the 11th annual convention of the National Commercial Refrigerator Sales Association, to be held at the La Salle hotel here Nov. 18-19, NCRSA announced.

The group listed these highlights of the four business sessions planned for the convention:

(Concluded on Back Page, Col. 3)

NWAHACA

CLEVELAND — "Altogether new" is the way the program committee of the National Warm Air Heating & Air Conditioning Association describes the program which it is planning for the association's 44th annual convention to be held Thursday and Friday, Nov. 21 and 22, at the Hotel Morrison in Chicago.

"For years industry people have advocated that instead of talking 'at' each other the manufacturing, wholesaling, and dealer contracting segments of

(Concluded on Page 9, Col. 1)

Hajoca Moves Into Smaller Quarters

PHILADELPHIA—Hajoca Corp., refrigeration, air conditioning, plumbing, heating, and industrial supplies and equipment wholesaler, has moved its headquarters to smaller quarters at Ardmore, Pa., J. W. St. Clair, president, announced recently.

St. Clair stated that "shrinking operations" brought about the move. Over the past few years Hajoca has reduced the number of its branches from 35 to 21 and reduced its office force from 110 to 70, he said. He also disclosed that the firm had sold its large Philadelphia building to the University of Pennsylvania for $350,000.

"While we're continuing to operate at a profit this year," he added, "there has been some reduction in business because of the home building slump." The firm's industrial business has shown some signs of improvement, he commented.

For the six months ended June 30, last, Hajoca reported net income of $105,250, equal to $1.48 on each of 71,140 capital shares. This compared with $110,521, or 66 cents on each of 166,977 capital shares in the like period of 1956. The decline in shares outstanding was due to a capital reduction program undertaken in 1956 which St. Clair said "is now completed."

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Place your ad today!

General Controls Will Expand Its European Market

LOS ANGELES — Plans for European market expansion with sales headquarters in West Germany were announced here by William A. Ray, president and board chairman, General Controls Co.

The Glendale, Calif. industrialist disclosed that Jack F. Ray, sales vice president of the company, has left on a two months' trip to survey the European market and to select a headquarters location serving as a pivote for General's foreign distribution. He will also choose a European manager.

President Ray said the move is an expression of confidence in future stability of the European economy. It will not disturb General's existing distribution channels.

Unions Agree on Jurisdiction for Air Conditioning Duct Linings

SAN FRANCISCO—A clear-cut agreement on union jurisdiction for air conditioning duct linings was reported to the second annual convention of the Insulation Distributor-Contractors National Association, Inc., which met here Sept. 17-20.

W. J. Donahoe of Chicago, chairman of the labor relations committee and a vice president of the association, said committee members were invited by the International Association of Heat and Frost Insulators and Asbestos Workers to sit in with them for their negotiations with the Sheet Metal Workers International Association on the dispute over air conditioning duct linings.

For the first time contractors from both sides sat in on a jurisdictional dispute between two unions, he commented.

The three members of the IDCNA committee, and three members from the Sheet Metal Contractors Association, with representatives of the two unions, drew up the agreement.

Arrangements have been made so the joint committee, composed of contractors and union men, will meet from time to time to review the working of the agreement, and to revise it if needed to meet changing conditions in the industry, Donahoe said.

A letter is being prepared which will be sent to engineers, architects, specification writers, and others concerned, informing them of terms and meaning, and asking their cooperation in application of the agreement.

Carl W. Sickles, General President of IAHFIAW, addressed the convention on behalf of his union and referred to the satisfactory manner by which the jurisdictional dispute has been settled.

New Distribution Program Set for Beverage-Air Line

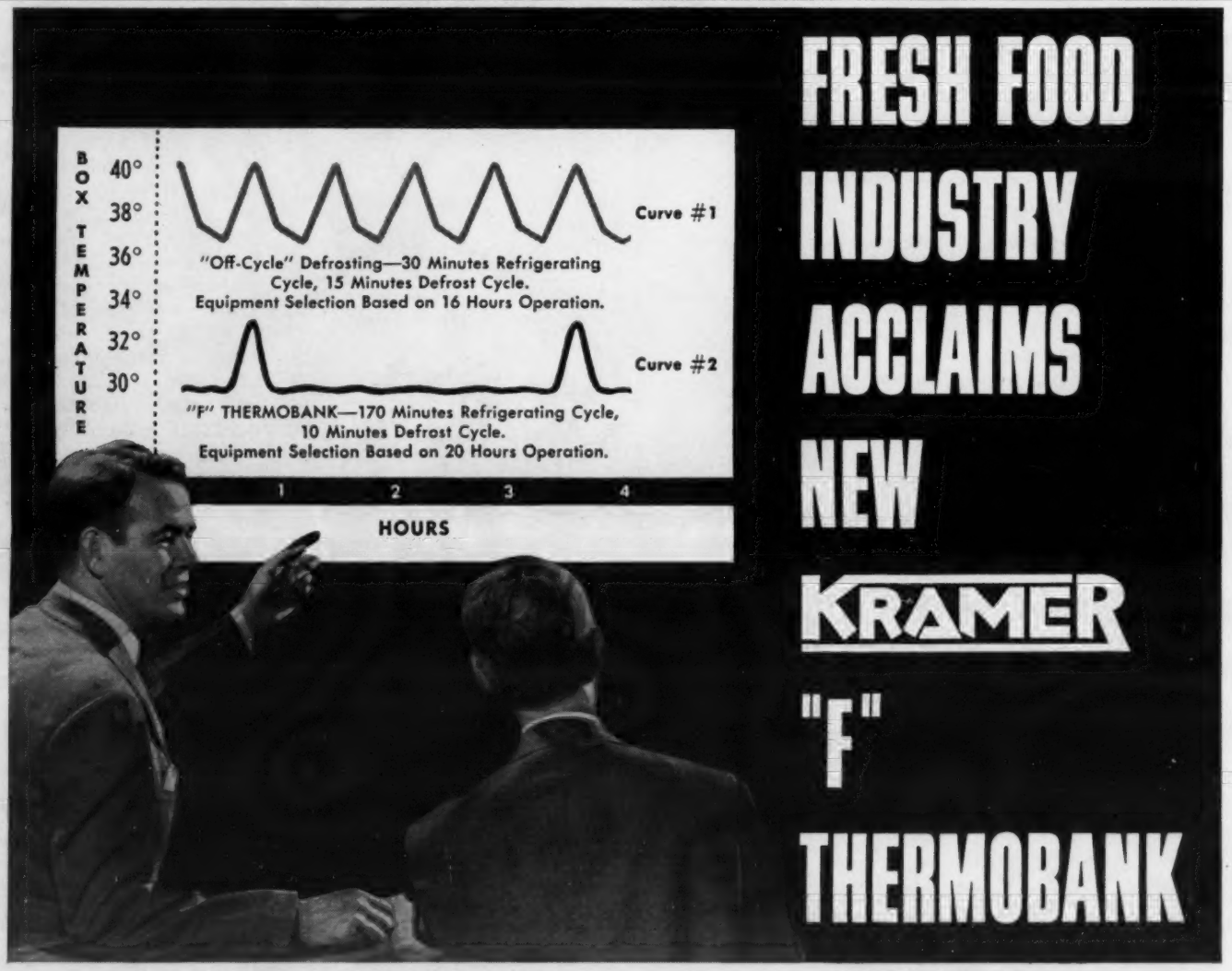
PUNXSUTAWNEY, Pa. — A new distribution and warehousing program for "Beverage-Air" coolers has been announced by Herman L. Buffington, president of The Punxsutawney Co.

Warehouses for the coolers are being established in various marketing and distribution centers throughout the country, permitting dealers and distributors to draw on local inventories.

"Based on experience factory representatives help determine the inventories for each warehouse and stock double their monthly sales," it was pointed out. "The program to a great extent, operates as though it were the representative's own distributing business.

"Custom designed trucking equipment, in conjunction with commercial warehousing, makes the program possible. Both distributors and ultimate users of Beverage-Air equipment benefit by lower prices and prompt delivery.

"Already operating with warehouses in Trenton, N. J., Memphis, and Pittsburgh, this program will be expanded to cover other marketing centers."



FRESH FOOD INDUSTRY ACCLAIMS NEW KRAMER "F" THERMOBANK

KRAMER UNFOLDS A NEW CONCEPT OF REFRIGERATION APPLICATION FOR FRESH FOOD

To obtain the fullest advantage in the storage of most fresh food, a constant temperature of 30° or 32° must be maintained. Since every defrost cycle results in fluctuations in temperature and humidity, to maintain the best storage conditions the number of defrost periods and the length of each defrost must be reduced to an absolute minimum.

The new "F" THERMOBANK has the *fewest* possible defrost periods and is the only system that will go into a defrost when it is really needed and not before; this is most essential to prevent unnecessary defrost which results in wide temperature and humidity fluctuations in the storage room. (See Curves)

The "F" THERMOBANK is completely defrosted in the shortest possible duration (10 minutes). No other defrost system, regardless of type, can approach this fast defrost, but the rapidity of defrost is indispensable to hold the ideal conditions of 30° or 32°.

Because the "F" THERMOBANK guarantees the fewest and most rapid defrosts, equipment is selected for 20 hours operation. This permits the selection of a smaller compressor and a smaller THERMOBANK system resulting in lower first cost as well as economical operation. When the added benefits of "F" THERMOBANK features such as less waste, longer shelf-life, less dehydration, less mold and bacterial infection, and maintenance of "freshness" during storage, are included in the cost estimate, the "F" THERMOBANK is incomparable in value.

Selection and application of the "F" THERMOBANK are simple. Rapid selection tables covering a wide range of cooler sizes for 30° applications are available.

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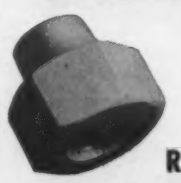

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For more information about products advertised on this page use Information Center, page 14.

[open letter to all who sell or install central residential air conditioning]

WILL MORE EDSELS BE SOLD IN 1958 THAN CENTRAL AIR CONDITIONING?

Detroit predicts that over 200,000 of these fine new cars will be sold next year! How many central residential air conditioning installations will our industry sell?

It's staggering to realize that a *single* brand of automobile, starting from scratch in one of the most highly competitive industries in the world, will top or equal sales expectations for our *entire* industry!

The fact is, central residential air conditioning has *not* grown the way everyone anticipated. We are lagging far behind our goals . . . even below our own estimates!

Why? The manufacturing facilities are there, ready to fill orders just as fast as they are received. The product quality is there—represented by top name companies with a reputation for quality and fairness of price!

The market is certainly there: multi-millions of existing homes . . . home building still at the going rate of nearly one million a year (yet only one home in eleven is being equipped with any type of central cooling).

What then? Certainly we cannot wait for the public to "discover" the many advantages and benefits of central air conditioning.

And that puts the finger squarely on *sales!*

So long as there are people who buy new automobiles, hi-fi sets, swimming pools, summer cottages and a host of other products for better living, *they can be sold—and will buy*—central residential air conditioning!

This is your area of competition—not among ourselves! Of the countless dollars spent annually for pleasure and to beat the heat, *what share are you getting?* Are you satisfied?

We are certain that you are not! We're sure that you, like other forward-looking air conditioning specialists, are earnestly seeking ways to improve your position . . . ways to *really* break your own local market wide open—*profitably!*

And the opportunity is there! Again, quoting the invaluable DuPont 1956 Survey of Residential Air Conditioning:

. . . 81% of those who purchased residential systems said they talked to no dealer other than the one from whom the unit was purchased!

. . . 49% said they purchased from a dealer or contractor they knew personally—or who had previously done satisfactory work for them!

. . . 18%—*only 18%*—said they bought from a specific dealer because he had the lowest price!

This means that the buyer places great faith in the advice and counsel of the seller and installer of air conditioning! It means that he commands respect—that people place the comfort of their homes in his capable hands.

There are air conditioning selling organizations that are doing a great job in moving product from their floors into the homes of their communities. And they are making money! They are building a real and solid future.

Like politics, this is a "grass roots" business! Local! Right in your own home town!

Imagine what would happen if dealers everywhere would join in a mass sales crusade!

The complexion of this business would change *overnight!*

It can happen! But it requires leadership . . . guidance!

It takes a realistic plan.

Westinghouse is ready to offer it.

Like to know more? Call or write today.

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YOU CAN BE SURE...IF IT'S Westinghouse

WESTINGHOUSE ELECTRIC CORPORATION
Air Conditioning Division
Staunton, Virginia

Kelvinator Refrigerators--

(Concluded from Page 1, Col. 5)

of the appliance business today."

Travis explained that a transition in styling, pegged heavily to the "built-in look," is currently under way in the refrigerator field. However, the vast majority of replacement buyers have not yet accepted that trend, though it is growing.

"Basic volume in the household refrigerator business is achieved by aiming your line where you know the market is, not where you would like it to be," Travis declared.

"Our own surveys indicate that better than seven out of 10 potential refrigerator buyers still express preference for the contemporary free-standing look over the built-in look, although the acceptance of the new trend is slowly gaining."

The Contemporary line is designed to meet that preference. It includes eight models ranging from 8 to 16-cu. ft. capacity in four cabinet widths.

The new electric ranges for 1958 include three 40-in. and three 30-in. models, with top-end styling in every model, Travis said.

Contemporary interiors have been newly color-styled in "French Vanilla" that blends harmoniously with exterior colors of Bermuda pink, surf turquoise, buttercup yellow, and Spring green as well as traditional white. Three models are available in color—the "Foodarama," the two-door K69H-13, and the K65H-14.

Convenience features include special "handi-chests" in the door for storage of butter and other dairy products, twin egg trays and slide-out aluminum shelves. All models have snap-action safety doors that can be opened from within as easily as from outside.

NEW "FOODARAMA" features maximum "out front" storage for both fresh and frozen foods in less than four feet of floor space. Kelvinator's 1958 Foodarama with 16.3-cu. ft. capacity offers special storage areas for every food, such as this slide-out fruit basket. Three shelves slide out for convenience in loading and unloading. Door contains twin "handi-chests" and four shelves, including two egg inserts.

CONTEMPORARY FOODARAMA

The Contemporary Foodarama has a total of 16.3 cu. ft. of storage with more than 11 cu. ft. of fresh food storage, and a 175-lb. frozen food capacity. It measures less than 48 in. wide. Design of the Foodarama combines a vertical freezer side-by-side with a fresh food compartment.

Three shelves, a full-width fruit basket and twin crispers slide out for convenience in loading and unloading. Removable egg inserts, holding one dozen eggs, slip into top door shelf.

The U-Shaped "humidiplate" at top of the fresh food compartment extends across the back and both sides to maintain the proper balance of cold and moisture. This "moist-cold" allows the homemaker to store foods without covering, and automatically defrosts itself.

The separately insulated and refrigerated freezer has four ice trays and four refrigerated shelves. The remaining two shelves may be removed for storing bulky items.

Door shelves are handy for packaged ice cream in pints, quarts, and half-gallons, as well as packaged frozen foods. Frozen fruit juice and soup dispensers holding up to 21 cans make it easy to use oldest foods first.

Utility bin at the bottom of freezer door is unrefrigerated, making an ideal storage area for items that need no cooling, or for freezer materials.

With a total capacity of 13.1 cu. ft., model K69H-13 provides 85 lbs. of frozen food storage and 10.7 cu. ft. of fresh food capacity.

The top freezer is separately insulated and refrigerated with a separate exterior door. Door shelf holds ample amount of packaged frozen foods. Ice trays in the frozen food chest are stored in a removable rack.

The 31-in. model is available in four exterior colors and white.

Single door model K65H-14 has a home freezer across the top that stores 68 lbs. of frozen food.

Moist-cold fresh food compartment automatically defrosts.

It, too, is available in four exterior colors and white.

Model K45-11 has pushbutton defrosting that resumes normal refrigerating operation automatically when defrosting is completed. It has a 10.8-cu. ft. capacity.

FULL-WIDTH FREEZER

Full-width freezer holds 52 lbs. of frozen food plus an additional 15 lbs. in storage tray.

Model K43H-11 is a manually-defrosted model that is identical to K45H-11 in size, features, and appearance.

Model K42H-11 is a manual defrost model with a 52-lb. frozen food chest and additional 15 lbs. of frozen food storage in tray below.

Total capacity is 10.8 cu. ft. It has fresh food storage in cabinet and door plus twin crispers.

Model K22H-8 is an 8.2-cu. ft. model with 52 lbs. of frozen food storage in full-width freezer chest and storage tray. Cabinet is only 24 in. wide.

Model K21H-8 is a modification of K22H-8 with full-width freezer and bar-type shelves.

YOU CAN PROTECT YOUR MOTOR AGAINST OVERLOAD WITH MIGHTY MITE MOTOR PROTECTORS

There's a Mighty Mite motor protector of the correct size and dimension, as small as ¾" long x 5/16" wide, to fit practically any normal or special stator design up to a capacity of ⅓ h.p., 115/230 volts.

Mighty Mite is a temperature sensing device which automatically breaks the motor circuit whenever the operating temperature rises above a safe limit. The Mighty Mite motor protector is accurately pre-calibrated to "break" at any required temperature up to 200°C. There is no further adjustment or handling necessary prior to installation in the motor stator.

Once installed, Mighty Mite provides continuous and automatic protection to the motor against overheating due to mechanical overload, voltage variation, or any other cause.

The Mighty Mite protectors illustrated above are actual size, and are only a few of the standard models available. Leads on terminals are furnished to individual requirements, and all Mighty Mites are packaged "ready-to-use" on your production assembly line.

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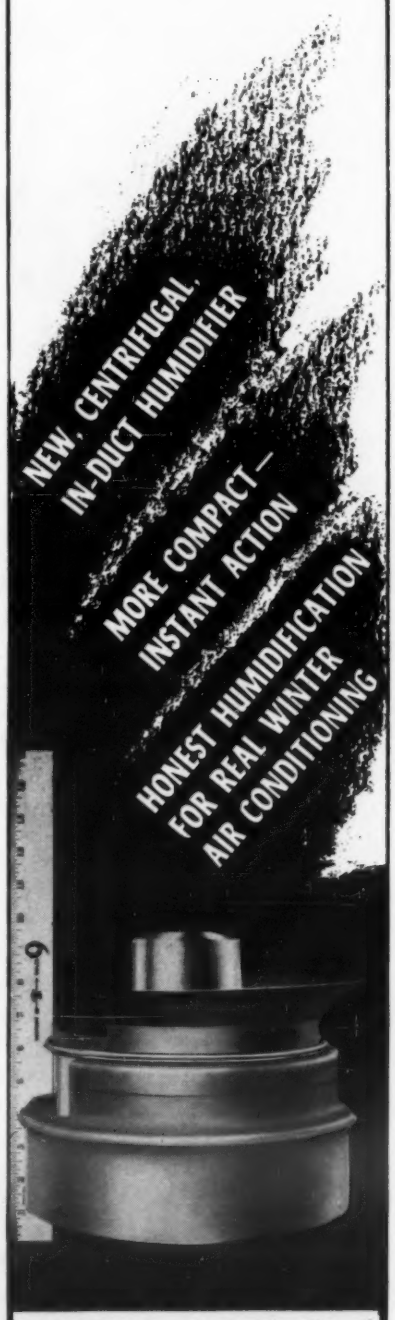
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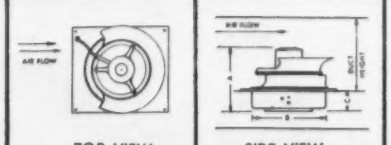

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For more information about products advertised on this page use Information Center, page 14.

Truck Body and Equipment Show Opens Oct. 14

WASHINGTON, D. C. — The 10th annual convention and exhibit of the Truck Body & Equipment Association will be held at the Atlanta Biltmore hotel in Atlanta, Oct. 14 to 16, it was announced here.

A record number of exhibitors, including several in the refrigeration field, will occupy 129 spaces in three exhibit areas. They will show the newest developments in truck bodies, special truck equipment, truck chassis, hydraulic hoists, lift gates, refrigeration, insulation, transport heating, truck seats, paints and finishes.

Industry presentations will include several panel discussions. One of these will be on "Refrigeration and Insulation."

Senator Herman E. Talmadge of Georgia heads the list of luncheon speakers, which also includes John B. Naughton, general sales manager of Dodge Truck Div., Chrysler Corp., and Mrs. Bernice Brown McCullar, Georgia State Dept. of Education.

R. B. Schmidt Named Mueller Climatrol Sales Promotion Mgr.

MILWAUKEE — Richard B. Schmidt has been appointed to the newly-created position of sales promotion manager for the Mueller Climatrol Div. of Worthington Corp., it was announced by H. P. Mueller, Jr., vice president in charge of sales.

R. B. Schmidt

Schmidt joined Mueller sales organization in 1947 as a sales correspondent and later became a territorial sales representative. Since January, 1956, he has been Milwaukee sales manager.

Oppose City's Use Of 'Trainees' In Los Angeles

LOS ANGELES—Objection to employment by the city of "trainees" was made to the City Council, in behalf of the Construction Employers' Council by Henry B. Ely, who is also executive secretary for RACCA of Southern California.

"Trainees" are high school graduates who, according to Ely, without supervised training would try to become journeymen.

Ely said the high school graduates should become properly indentured apprentices.

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on Room Air Cond. Covers

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Applying Weather Forecasts

Meteorology Conference To Discuss Use Of Long Range Data In Hartford Oct. 28

HARTFORD, Conn. — Businessmen and industrialists from all over the nation will be meeting with some of the nation's top professional weathermen here Oct. 28-29 to discuss problems common to businessmen and meteorologists and possibilities for application of weather information to operational problems.

The conference, under the joint supervision of the Connecticut Valley branch of the American Meteorological Society and the Hartford Chamber of Commerce, is sponsored by the American Meteorological Society.

"The business of putting the weather to work by deliberate utilization of weather data in operational problems is one that has expanded rapidly and very successfully in recent years," it was noted by Kenneth C. Spengler, AMS executive secretary. "Executives in all sections of the business world are beginning to look for ways to work with rather than against weather."

This first National Conference on Applied Meteorology will feature several joint presentations by management and meteorologists outlining specific case studies along this line, and indicating some new approaches to common weather problems.

In addition, there will be authoritative statements on the status and prospects for such rapidly changing fields as weather control and long-range forecasting. A special session will be devoted to weather problems associated with nuclear power developments.

Among participants will be representatives of Lockheed, General Electric, Du Pont, Pacific Gas & Electric, the Atomic Energy Commission, and many of the professional meteorological consultants of the nation.

Luncheon speakers will include Louis S. Rothschild, Under-Secretary of Commerce for Transportation, and Prof. Henry G. Houghton, chairman of the Dept. of Meteorology, Massachusetts Institute of Technology.

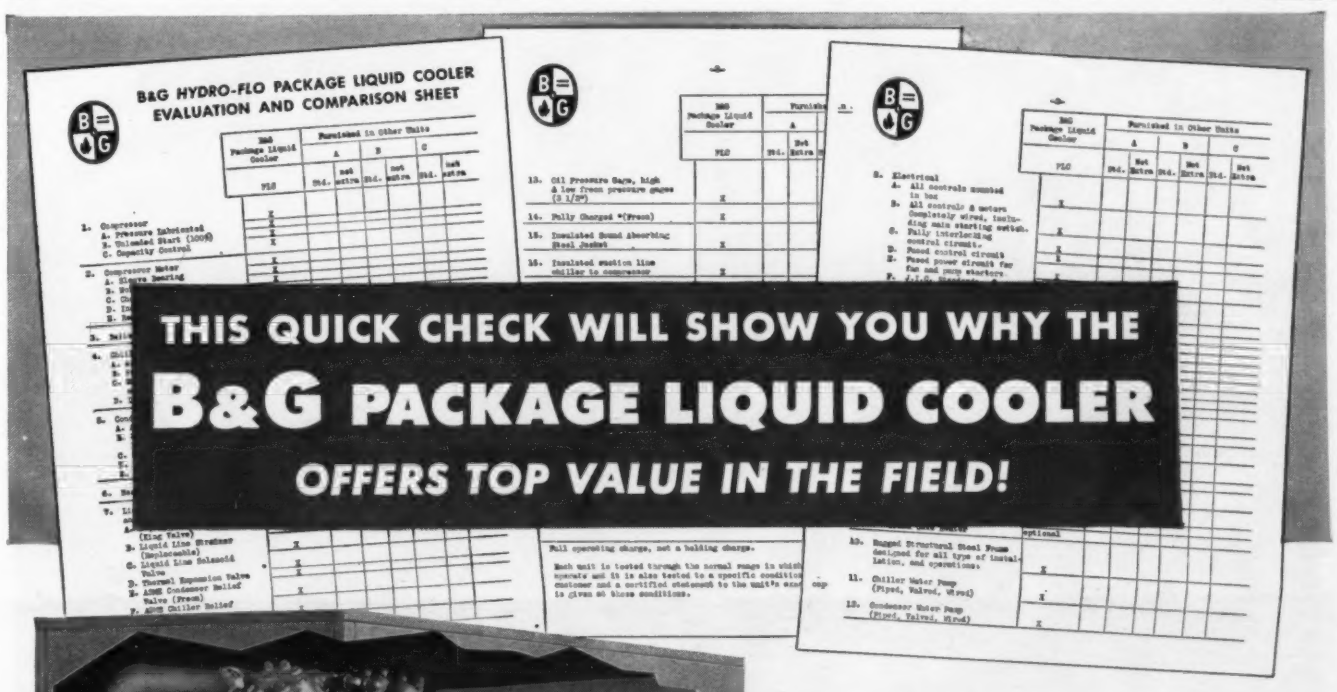
Information on details of registration and attendance may be obtained by writing Robert G. Miller, Weather Bureau Center, The Travelers Insurance Companies, Hartford, Conn.

SMI Shifts Meeting To Atlantic City

CHICAGO—The 21st annual convention of Super Market Institute has been shifted from Cleveland to Atlantic City, it was announced by Henry J. Eavey, president, Eavey's Super Markets, Richmond, Ind. and president of the supermarket group.

The SMI convention will be held in Atlantic City's Convention Hall this coming May 25-28.

Improved hotel facilities for those attending the convention and the excellently-equipped exhibit areas available in Atlantic City for the accompanying trade show of manufacturers of foods, equipment, and services for supermarkets led to the change in plans, Eavey explained.



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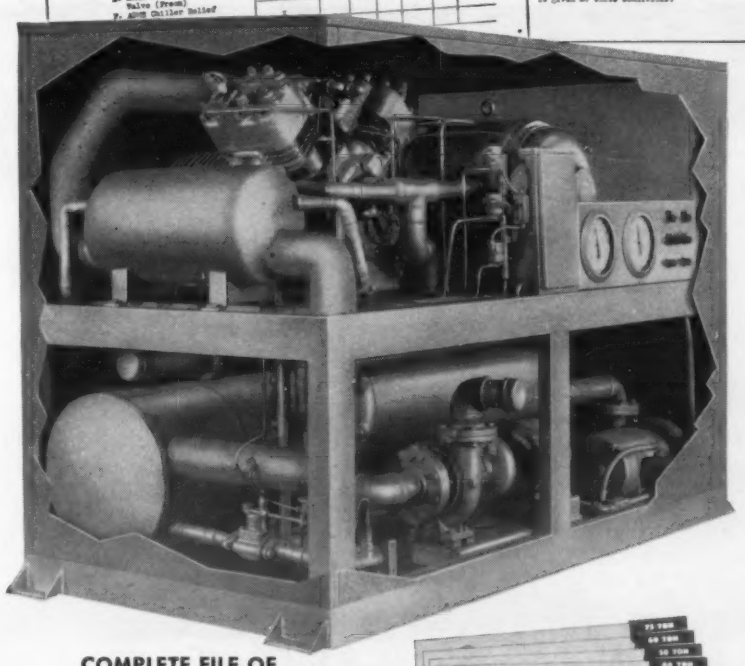

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No structural framing costs. All equipment is mounted on a rugged steel frame—a permanent base.

No metal forming costs. Standard equipment includes a heavy gauge steel jacket with sound-deadening undercoating and Hammerloid finish.

No insulating costs. The suction line and heat exchanger are fully insulated.

No testing costs. Fully tested under specified operating conditions and also under varying load conditions. All valves adjusted and balanced.

No extras to buy. Standard equipment includes gauges, compressor motor, all belts, driving sheave, compressor fly wheel, increment start, full sized heat exchanger and full operating charge of Freon.

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Consider Pre-Planned Air Conditioning Essential In Home; May Eliminate Ducts

See Need for 'Full Liaison, Between Architects, Engineers for Home's Thermal Efficiency

LOS ANGELES — Panelists participating in a discussion on "The Indoor Climate of the Future: Its Challenge" during the indoor climate design conference held here recently agreed that pre-planning of air conditioning is essential.

The conference was staged on the campus of the University of California at Los Angeles. It was sponsored by the UCLA Dept. of Engineering and Engineering Extension in cooperation with the Institute of Heating & Air Conditioning Industries.

The two-hour panel discussion was moderated by Dean L. M. K. Boelter of UCLA's college of engineering.

Panel members were Dr. L. P. Herrington of Yale university and director of research for Pierce Laboratory of Hygiene; F. W. Hutchinson, professor of mechanical engineering at the University of California, Berkeley campus; John E. Haines, vice president of Minneapolis-Honeywell Regulator Co.; John Rex, Los Angeles architect; and William A. Ray, president of General Controls Co.

Hutchinson said a house built without pre-planned air conditioning may "look right but it lives terrible." He predicted that within 10 years there would be either full liaison between architects and engineers or that architects would be held formally responsible for thermal efficiency—or inefficiency.

'Shell-Within-a-Shell' Air Conditioner

Rex endorsed this contention. He spoke of the shell-within-a-shell construction obviating the need of heterogeneous ducts and pipes.

He spoke of the jocular slogan of the California air conditioning industry, "Controlled environment from the womb to the tomb." He added that he had recently observed an air conditioned cemetery crypt, giving point to the slogan.

Herrington said experiments showed that the temperature at which heavy work can be carried on with the fewest accidents is 55 to 60°. He said mental errors, such as clerical inaccuracies, tend to increase after 79°. He said observations of albino rats suggest that in a warmer environment an animal's life span increases but so does lethargy.

Traces Heating Plants To Open Fire Stoves

Ray said today's heating plants trace back to the open fire and solid fuel stoves of early habitations. He said that in many existing structures there is no spatial uniformity of temperature, poor insulation, bad sun and wind exposures, spot sources of cooling and infrequent "on and off" temperature control.

Ray said frankly that "better indoor climate is going to cost more. Certainly, however, consumers who are making adequate annual outlays for automobile air conditioning can be enlightened as to the need for proper indoor climate at comparable annual financial costs."

Ray also said he felt there is a lack of adequate design progress. He said the concept of introducing conditioned air through a single outlet is obsolete and called for a totally different and revolutionary design approach that would introduce the air into the room through new methods, like the walls.

John Rex, the architect, proposed a double shell structure as one method of eliminating the network of ducts which now wastes space and creates building design problems.

'Vigorous Case' for Air Conditioning

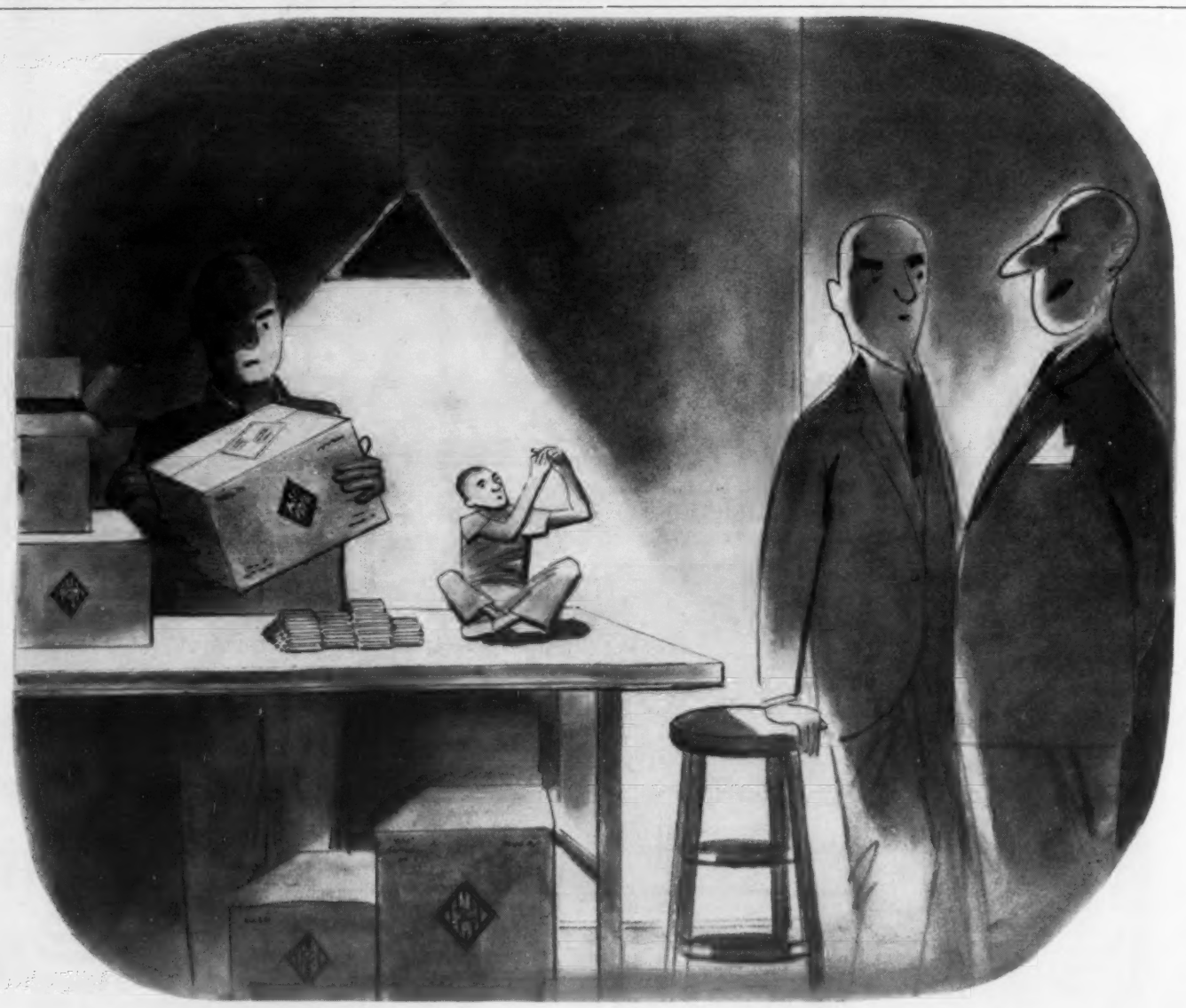
In a talk presented earlier, a vigorous case for air conditioning was presented by Prof. Hutchinson. He dealt with "Static and Environmental Methods of Environmental Control."

He went into the problems of the engineer with air conditioning, stating three negative fac-

(Concluded on next page)

Conference Chairman

GENERAL conference chairman Leo Hungerford presided over the opening session and some later sessions of the indoor climate design conference in Los Angeles. He also participated in the final panel discussion. Hungerford is director of sales engineering for Utility Appliance Corp., Los Angeles.



"Couldn't help noticing how well equipped you people are to handle small diameter parts and tubing."

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For more information about products advertised on this page use Information Center, page 14.

Pre-Planned Air Conditioning--

(Concluded from preceding page)

tors facing the air conditioning engineer.

First negative factor is incomplete data on climate; second is inadequate data on physiology; human requirements; third negative factor is economic.

House systems are being built which are not perfect. The man with a tremendous amount of hind-sight tells us what we should have done, Hutchinson remarked.

4 Basic Steps

He said the step-by-step procedure involved in fundamental design has four basic steps: (1) Define the problem; (2) evaluate the load; (3) design air conditioning which will operate with what energy is needed to meet extreme conditions; and (4) provide control for the system.

A carefully-documented talk which was illustrated by correlated colored graph slides absorbed the attention of the audience and brought requests for copies of the data presented by John E. Haines whose topic was "Economics of Year-Round Air Conditioning."

Haines, who is a past president of the American Society of Heating & Air-Conditioning Engineers, began his talk by reminding the industry of the potential ahead of it.

"After 50 years of improvements in the science of air conditioning" less than 10% of nonresidential buildings constructed or remodeled in 1956 had complete year-round air conditioning. Less than one-third of them had any form of cooling.

The reason for building owners' failure to embrace the advantages of air conditioning, Haines said, is twofold: "They do not understand what air conditioning is," and "they do not know the economic benefits."

Haines gave the ASHAE definition: "Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space."

Improves Human Performance

Attention to these needs improves human performance. A utilities company boosted efficiency by 51% by air conditioning its drafting room.

Government stenographers' output rose 24%.

A hosiery plant chalked up a 29% increase in production.

In New York 75 plants reported 25 to 30% reduction in absenteeism.

A watch company said its rework declined by 25%.

All these advances stemmed from the introduction of air conditioning, Haines noted.

Advantages brought by air conditioning include: increased efficiency, reduced personnel turnover, better employes and tenants, increased comfort for customers and guests, and reduced cleaning costs.

But, Haines added, the hardheaded building investor must be shown how much of an efficiency increase is needed in his case for an installation to be economically profitable.

Year-Round Cooling Statistics Kept

He offered a series of statistics showing complete year-round air conditioning accounts for only a small increase in overall building cost and maintenance percentagewise.

Haines reported the San Angelo, Texas school board has successfully planned a new air conditioned school building for 7% less cost than a non-air conditioned one would have cost.

A report on other presentations made at the conference was published in the Sept. 23 issue of the NEWS.

At the close of the conference, it was announced by Sam Houston, assistant head, engineering extension, UCLA, Los Angeles 24, that plans were being made to reproduce the proceedings and make them available in mimeographed form at cost.

New Wholesaler Opens

BINGHAMTON, N. Y. — A new refrigeration supply wholesaler has begun operations here at 222 Court St. Known as Meier Supply Co., the firm purchased the refrigeration supply inventory of the former W. A. Case & Son Mfg. Co. branch here.

F. M. Meier, with Case for 35 years, and local manager since 1934, heads the new outlet.

Death Notices

Harold E. Gahnz, 51, Armstrong Furnace Co. district manager from Fond du Lac, Wis., died at his home in Wisconsin. Cause of death was a heart attack.

Gahnz has been in the sales field throughout his adult life and had only recently been appointed a district manager by Armstrong. He had been on special assignment.

* * *

Robert Ryland Taliaferro, 80, a pioneer air conditioning engineer, died recently at his home in Lexington, Tenn.

During his career he was credited with many advances in air conditioning. After his retirement in 1947, the Federal government called him into service to do additional research on heat generated by airplane and jet engines.

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Because of improved production techniques, we make the lowest priced, quality, heavy duty all brass dryer available. *HI-DRI's* performance tops or equals that of any other dryer. *HI-DRI* has all the same qualities . . . all brass shell, PA-400 silica gel, brass outlet screens, seams silver soldered, 100% guaranteed, but . . . is *lower priced.* Increase your profits by using Wabash. Write for information *today.*

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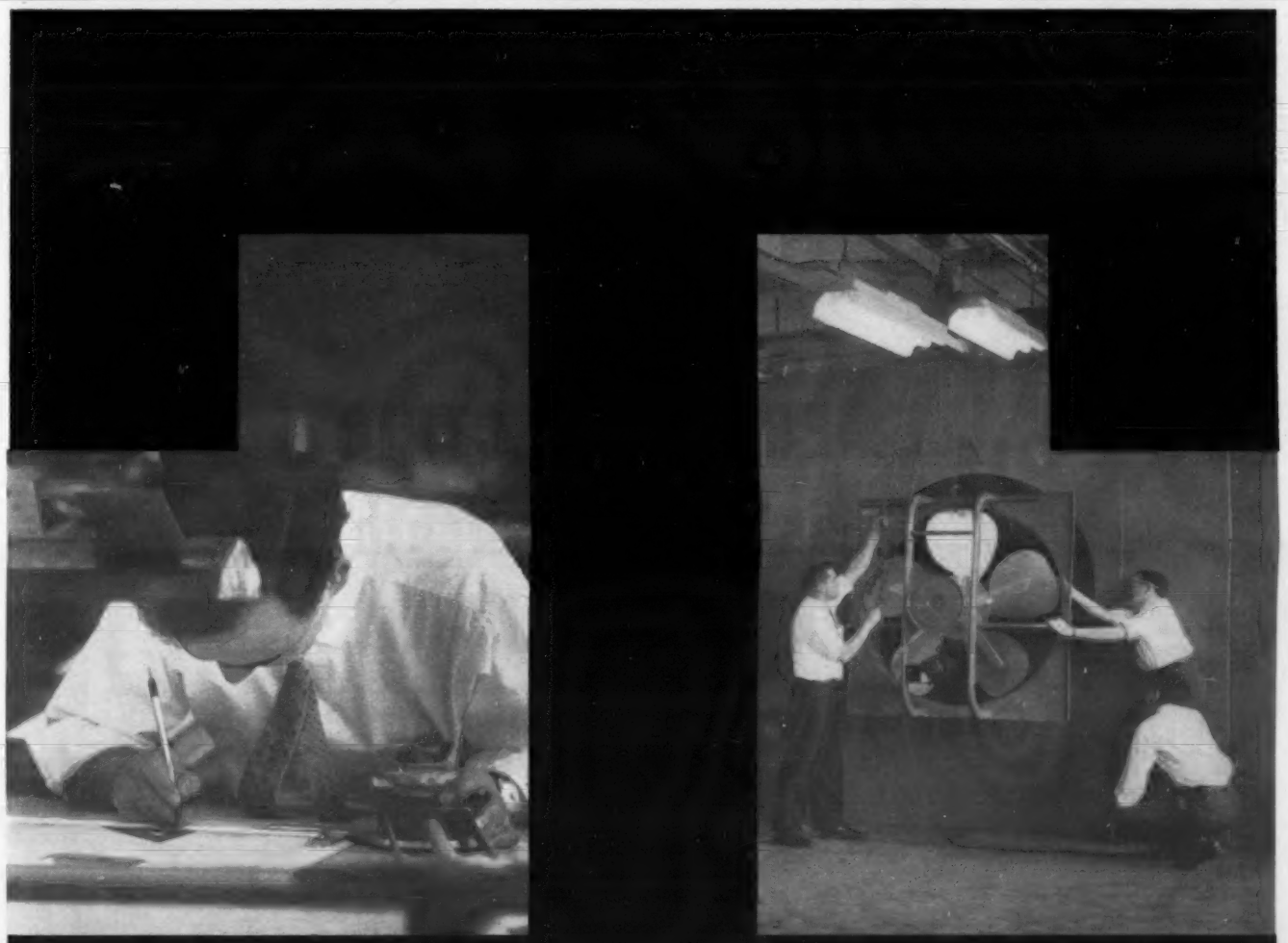

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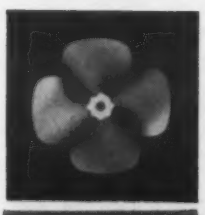

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For more information about products advertised on this page use Information Center, page 14.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

"I yelled 'look out!' twice before he ducked.

Connie Mack put a hypothetical query to Catcher Wally Schang. "Ty Cobb is on second ready to steal third," Mr. Mack posed. "What would you do?"

Schang winked: "I'd fake a throw to third, hold the ball, and tag the soandso as he slid for the plate."

Long-distance phone call to Vinegar Bend Mizell (in Cuba) from his mother-in-law, back in "the States." Understandably, the Cardinals' prime property was uneasy.

"Son, you got yourself a newborn son," he heard her state.

Long Silence.

"Son, are you there?"

Shorter silence.

"Yeah, ma'am. Thought I was supposed to faint."

Stan Musial acted as godfather for the baby son of an old friend (Bud Hamilton of Sarasota, Fla).

Officiating priest, filling out the record, asked Musial his name and occupation.

"Stan Musial. Baseball Player."

"Indeed," nodded the Father, writing. "Now, what is your occupation?"

"My cutest trick," confessed Birdie Tebbets, "was this stratagem. I'd ask the batter what kind of pitch he preferred, and would signal for the pitch he wanted. Of course, he wouldn't believe me. He'd figure we were setting him up for a double-cross. From then on he wouldn't be able to concentrate.

"I tried it on Joe DiMaggio when Joe was having a hot streak. This deal killed Joe's streak.

"I tried it on Ted Williams. 'O.K.,' Ted went along, 'Give me a fast ball.'

"So I did, and it cut the heart of the plate for a strike.

" 'Now give me a curve,' Ted followed.

"Up it came and Williams fouled out. He went hitless in six times at bat."

Old Ballplayers Never Die

Amazing how Phil Rizzuto shortstopped in such lively fashion at a relative old age. While warming up for a 1954 exhibition game in Greensboro, N. C., Phil was confronted by a strapping teen-age lad.

"Remember Mamie O'Rourke?" he hallooed. "She wonders if you recall the dates you two had in 1938?"

"Of course," polited the Yankee paragon. "Please give your sister my best regards."

"Mr. Rizzuto, sir, she's my mother."

For Indianapolis in 1954 pitcher Herb Score broke a multitude of records: strikeouts, ERA, shutouts, *et cetera*.

Thus he justified the confidence of the Cleveland management which paid him a $100,000 bonus, and the Cleveland scout who signed him. The latter married into Score's family as a clincher for the signature (happily, we trust).

Admitted-by-all as a genius, Larry MacPhail master-minded the Yankees into another championship. But he wasn't present at the victory celebration.

"Where's your father," sportswriter Tom Meany queried MacPhail's son, Lee.

"In Scotland, sir."

"Glug glug," gagged Tom, spilling a highball. "Can't British Empah ships bring enough Scotch to New York for your Pop?"

Clyde McCullough, a superannuated Cub catcher, was heckled by a Pirate fan, who shouted: "When are you going back to the minors?"

"I spent four years in the minors when I was with Pittsburgh," he retorted.

No answer from the heckler.

Record-maker Bob Feller was asked if a baseball really curves.

"When I throw it I'm not sure," he conceded, "but when I swing at it, I am."

Arizona weather was mild; but Cleveland pitcher Bob Chakales was hot (under his collar).

His infield had fallen apart.

Fourth error in the exhibition game galled Chakales, even though his club led, 7-4. He called in his infielders and catcher for a conference. An umpire disrupted it, but not before Chakales (pronounced "Shackles" with poetic justice) charged:

"Have the gamblers got a Fix on this game?"

Chakales was wrong, of course. Thereafter he vegetated in the Cleveland bullpen for a long time, and eventually was cold-shouldered out of baseball altogether. He had mentioned the Unmentionable.

"Hurry, please," taciturn Ted Williams belayed a loquacious Boston barber.

"Just a shave. Don't have time to listen to a haircut."

Scoop! Confidential!

Now it can be told: The year that George Sisler batted over .400, a clubhouse attendant laboriously "spiked" Sisler's favorite bat with forty dozen phonograph needles.

They were invisible to everyone, including Sisler; but they added "heft" to his swing, and power to his punch.

Please don't ask us the source for this revelation. A newspaperman always protects his "sources."

As a desperation move, owner Lou Perini transferred his debt-ridden Boston Braves to Milwaukee. The results *immediately* were astonishing. Items:

(1) A Milwaukee woman sued for divorce on the grounds that her husband wouldn't buy her a season ticket to the ball games.

(2) Sign posted in a closed Milwaukee barber shop: "Can't stand it any longer. Gone to the ball park."

(3) Communist Sigmund Eisenscher issued a press release which concluded: "We look forward to the Milwaukee Braves in action."

(4) In Beloit, Wisconsin, a factory erected a large sign: "Help wanted. Top pay. Only 90 minutes from the Stadium."

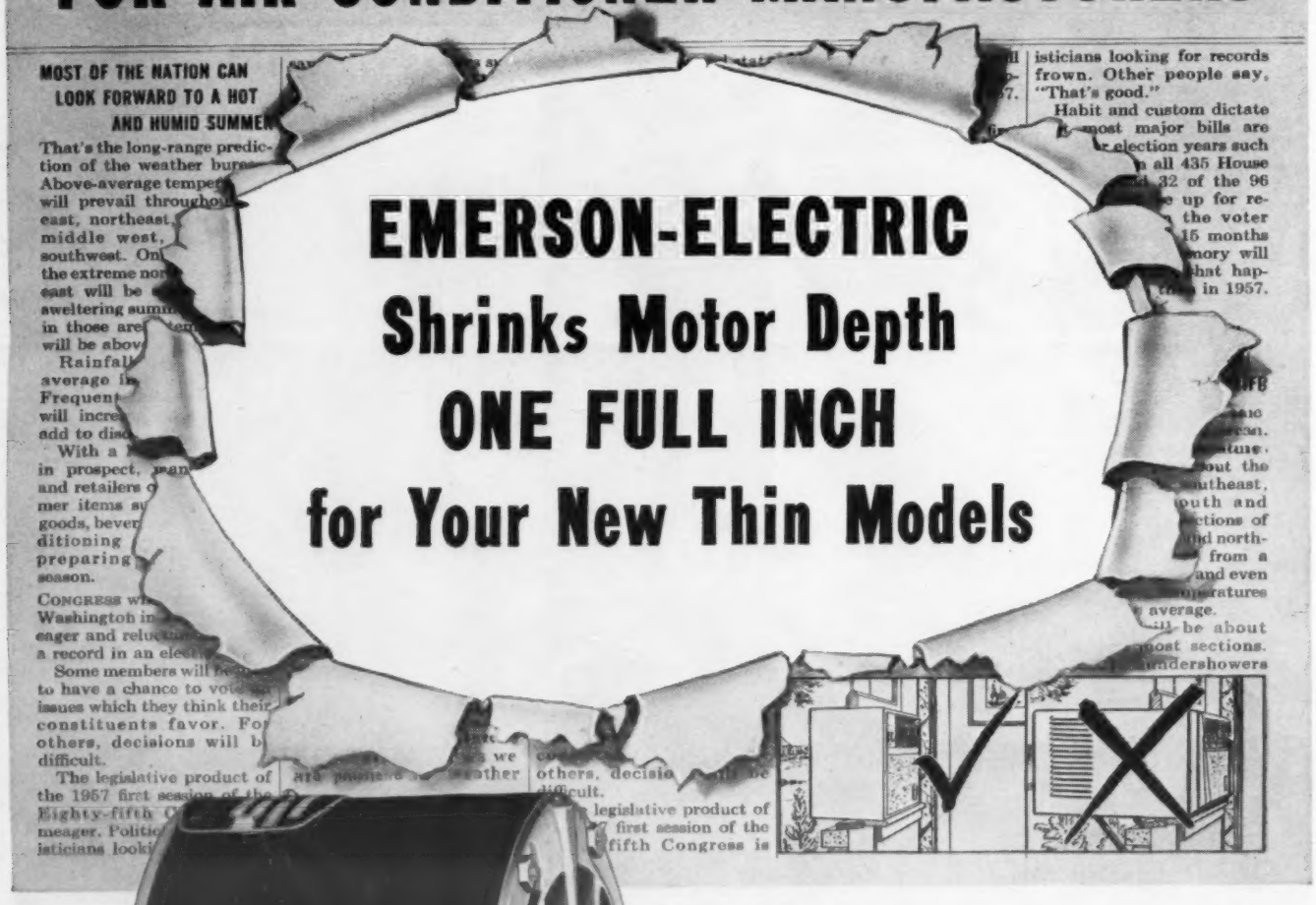
(5) The first five years it enjoyed major league baseball, Milwaukee smashed all-time NL attendance records.

(6) Well, you know who's in the World Series.

EXTRA

IMPORTANT NEWS FOR AIR CONDITIONER MANUFACTURERS

EXTRA



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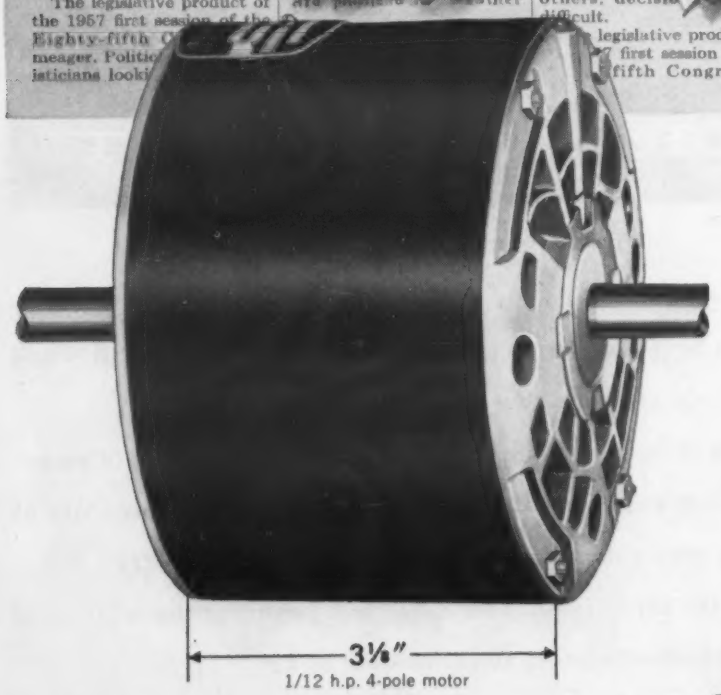
ONE FULL INCH
for Your New Thin Models



The Trend for '58

More compact . . . yet *without* loss of power! New Emerson-Electric shaded-pole motors have been reduced *one full inch* between the motor hubs. You will need these thinner motors in designing your new models!

Call, wire or write Dept. M-81 today for complete information, The Emerson Electric Mfg. Co., St. Louis 21, Mo.

EMERSON-ELECTRIC of St. Louis

LIVE BETTER ELECTRICALLY

Since 1890

For more information about products advertised on this page use Information Center, page 14.

NWAHACA's Convention Program--

(Concluded from Page 1)

the industry should talk 'with' each other," says George Boeddener, managing director of the association.

"So, this is just what we plan to do in presenting the speaking subjects on our convention program. We are arranging for representatives of each of the business segments of the industry to speak with one another.

'Two Speakers At a Time'

"This will probably be the first convention program in the history of the industry in which there will be two—and even three—speaker's rostrums on the same platform at the same time with a speaker behind each to discuss the program subjects from the standpoints of the type of business operation which he represents."

Each subject planned for the convention program will be a "dealer interest" subject dealing with a problem common in the dealer's sphere of business operation. Thus, a dealer representative will be one of the speakers on each subject.

'Dealer's Problems Those of Industry'

"Then, to demonstrate that every dealer's problem is not his alone but a problem for the entire industry, there will be a manufacturer or wholesaler representative who will serve as the teammate of each dealer who addresses the convention in order to show how each dealer problem affects the wholesaler and manufacturer.

"Dealer speakers have been selected as a result of their own individual experience in meeting and beating each specific problem covered by the program subjects. Thus, this year's convention will provide 'how to' information for all of the industry people in attendance as they listen to the 'case history' experiences of the dealers featured on the program."

Ups Profits 40% In 2 Years

Among program subjects to be presented are the following:

"The Terre Haute Story." Walter Stevenson, head of Hoosier Heating & Sheet Metal, Inc., Terre Haute, Ind., will describe how he increased his sales 70% and his profits 40% in two years by following a well-planned, continuous advertising program. His teammate in this presentation will be Frank Nunlist, executive vice president of the Mueller Climatrol Div. of Worthington Corp., whose staff helped Stevenson plan his ad program.

"Group Advertising Pays Off." A team composed of Walter Marth, head of G. F. Marth & Son, Milwaukee heating dealer, Frank E. Mehrings, president of Heating & Air Conditioning Supply & Service Co., Peoria wholesaler, and James F. Deane, vice president and general manager of Tuck-Aire Furnace Co., San Francisco manufacturer, will describe what happens when the industry works together in an area to promote better warm air and air conditioning.

Marth will describe the Milwaukee Operation WHAM program—now in its second year. Mehrings will describe the Peoria Operation WHAM program, now in its first year. And Deane will describe the "House Heating Secrets" promotion of the Warm Air Heating Institute of Northern California.

"Engineering for Profit." John P. Montonye, head of Indoor Comfort Co., Ypsilanti, Mich., teams up with Don Winegardner, sales manager of The Majestic Co., Huntington, Ind., to describe how accurately engineered heating/air conditioning installations pay-off handsomely in residential and commercial jobs.

"Buying for Profits." William E. Favret, of the Favret Co., and Adam J. Pataky, of Adam, Lusch & Schill Furnace Co., Columbus, Ohio dealers, together with Newt Hess, vice president of Vorys Brothers, Columbus wholesaler, will outline tips on shrewd materials buying for profitable operation of a dealership.

Other case histories will be presented by dealer-manufacturer-wholesaler teams on such subjects as "Profitable Prospecting," "You Can Sell Quality," "Standardizing for Profit," "Time-Payment Selling."

Industry members are urged to make room reservations now by writing to Morrison hotel, Clark and Madison Sts., Chicago, Ill., for room reservations.

Truck Features Heat Pump Demonstrator

THIS permanent 2-ton demonstrator model of Typhoon "Prop-R-Temp" heat pump has been installed by Bert Barry of Lauderdale Refrigeration, Fort Lauderdale, Fla., on one of his trucks for use as a sales converter. A water-to-air model with glass panels, the model is suitable for small commercial or small residential installation. It is hooked up with a garden hose and extension cord, the switch flipped, and the heat pump demonstrates how it performs on either heating or cooling.

WANTED

Qualified Man for Position as Direct Factory Sales Representative on the Pacific Coast.

Opportunity to represent well-known manufacturer of refrigeration parts in the Far West. Write, giving particulars, to BOX A5894, Air Conditioning & Refrigeration News.

Some things are tough to get at...

That is Professor Tennis C. Williams in the picture. He has concluded, and rightly, that the nesting grounds of the Tyrolean Whooping Manscratcher (the only bird with a poisonous bite) are real tough to get at.

But compared with getting at certain working parts in certain evaporative condensers, the nest of the Manscratcher is as accessible as apple pie in a cafeteria.

That's why service men are sometimes tempted to use burglar tools, and maybe some nitro, when the job calls for getting at inner working parts that need normal servicing from time to time.

On the other hand Recold Dri-Fan Condensers—the best in every other respect too—are engineered for easy access. Just remove a few screws and go right on inside. With Recold's patented access door, spray nozzles and float valves are easy to get at, too.

When it comes to inspecting and cleaning drift eliminators—on some condensers the service man yells for a blow torch. To get at the drift eliminators on a Recold Dri-Fan Condenser you just remove the screws and pull them out like a drawer... yet joints are tight and leakproof without gaskets or sealing compounds. It's a matter of engineering and patented design.

Be sure the evaporative condensers you invest in have ACCESS. Be sure you ask for Recold's Dri-Fan!

RECOLD CORPORATION

7250 East Slauson Avenue, Los Angeles 22, California

DESICCANTS AND DRIERS

Part 3—Chemical, Physical Desiccants

By Frank J. Versagi
Mueller Brass Co., Port Huron, Mich.

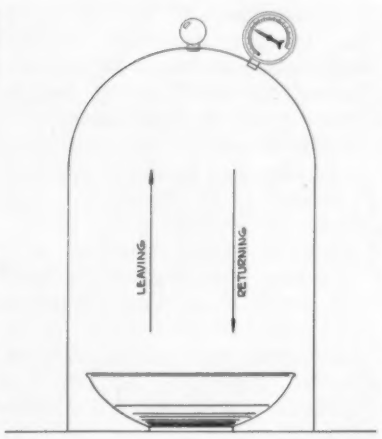
For a physical-type drying agent there is no one point at which it suddenly become ineffective. Instead, it gradually loses effectiveness as it adsorbs more water. In practice, its capacity is great enough to keep the moisture contents of refrigerants down to a safe level under most service conditions.

The water adsorbing function of a physical-type desiccant is entirely dependent on one phenomenon—called **equilibrium.**

Everything that happens in a system — temperature changes, pressure changes, high side or low side leaks will affect this equilibrium and therefore the function of the desiccant. Let's take a short look at the theory of equilibrium and apply it to practical conditions.

We will begin by examining a theoretical situation. We have a bell jar from which we have extracted all the air. Assume we are able to place a dish of water inside the bell jar without disturbing the vacuum. What happens? (In our theoretical situation, the temperature is such that the water does not boil.)

For a second or two there is still nothing—a complete vacuum —in the space above the water. But in the water there are forces which cause great movement of the tiny particles (molecules) of water, even though to us the water seems absolutely still.



BELL JAR: A state of equilibrium exists when opposing forces are equal. Here the number of water molecules leaving the dish exactly equals the number returning, so that the opposing pressures are identical.

Because they are agitated by these forces, some of these invisible molecules will leave the surface of the water and enter the vacuum. First a few, then a few more, than still some more. Flying about at random at great speeds, some of these particles will return to the dish and be recaptured by the body of fluid. This will continue until there are several million molecules moving about in our bell jar, although it will seem as if all of the water is still in the dish.

If we mounted a sensitive pressure gauge on the bell jar, we would notice that the pressure (which was almost absolute zero—or 30 in. at first) gradually rises to a certain maximum then remains stable. (This same effect would be evident if, insteady of a vacuum, there were air in the bell jar. For our purposes it is simpler to deal with a vacuum.)

At this point, when the pressure has stopped rising, what is happening in the jar? Has all motion stopped?

Not at all. Molecules are still leaving the water and entering the vapor phase above the dish. As long as more particles were leaving the dish than returning to it, our pressure rose. Now during any unit of time, **during any given minute or second, just as many molecules return to the dish as leave it.**

This, then, is our first simple equilibrium. Let's study it. One common misunderstanding in the field is the idea that in a state of equilibrium there is an equal amount of water in the refrigerant and in the desiccant. We see here that this is not so. Almost all the water is still in the dish; only a very small amount is in the vapor state.

Similarly, in a refrigerating unit most of the water is in the desiccant and very little remains in the refrigerant if the drier is performing properly.

If the amounts of water are not equal at equilibrium, what is? The pressure. For our purposes, we can say that the pressure exerted by the vapor phase exactly equals the pressure being exerted by the total amount of molecules leaving the liquid.

This vapor pressure is constant for a given temperature. If we raise the temperature of the jar, once again more particles or molecules will leave the liquid than return to it until such time as the pressure has again equalized.

Equilibrium, therefore, is the condition where active but opposing forces are at play, but are equal under a specific set of conditions.

Upsetting this equilibrium in favor of the refrigerant is the function of the physical-type desiccant whenever moisture enters the unit.

Let's return to our bell jar. We've reached equilibrium at some temperature. Now, without disturbing anything else, we replace the dish of water with a dish of physical-type desiccant.

There is no longer any liquid water to give off molecules. But the pressure of the molecules which were already in the vapor phase is still there. The desiccant will begin adsorbing these

(Concluded on next page)

REVERE
DRYSEAL
COPPER REFRIGERATION TUBE

There are no hangover blues when you take to bending DRYSEAL. Why it's so dead-soft that you bend it with your hands easy as pie . . . no tools needed. And the special temper and ductility of DRYSEAL also make it easy to flare for compression fittings without splitting.

Another very important feature of DRYSEAL is the double-crimp seal at each end of the tube. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. The seal is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself.

Also you'll find the job-size, 50-foot, one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.

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See us at the ARI 10th Exposition, Chicago Amphitheatre, Nov. 18-22, Booth #165

For more information about products advertised on this page use Information Center, page 14.

Desiccants--

(Concluded from preceding page)

particles and slowly the pressure will drop.

Because of the property of the desiccant, any water adsorbed will exhibit a greatly reduced vapor pressure than normal, and almost no molecules of water will leave the desiccant and reenter the vapor phase.

Through all of this, keep in mind that the water is still present as water. It has not been destroyed or changed in any way. The desiccant is merely making it more difficult for the water to exert any vapor pressure, so the water will not pass as readily into the vapor phase or refrigerant as the case may be. (The forces which bind the water so tightly to the millions of sub-microscopic pores in the desiccant are not completely understood, but are thought to be electrical in nature.)

In a refrigerating unit, one gram of water in the refrigerant would freeze up the unit. That same gram in a desiccant would result in less than 10 p.p.m. in the refrigerant if the drier were large enough in relation to the system.

Let's take another example. Let's talk about a small unit containing 1 lb. of refrigerant. One drop of water in a pound of refrigerant equals about 110 p.p.m. If we placed this drop in a unit and allowed the unit to run until the water was distributed throughout the system, we would end up with perhaps 60 p.p.m. moisture in the refrigerant. The rest would be adsorbed on the walls of the system and on the windings.

In this respect, the walls and windings act somewhat like desiccants themselves. If we allow the system to operate indefinitely, it will establish and maintain an equilibrium. The amount of moisture leaving the walls and windings will exactly equal the amount of moisture returning and the average moisture content of the refrigerant will remain about 60 p.p.m.

Until now we have by-passed a drier. We'll cut a drier into the line. From what we have learned, we can predict what will happen. As each portion of refrigerant passes through the desiccant, it will give up its moisture and become almost dry.

But, in passing over the still wet walls and windings, the dry refrigerant will pick up moisture again, in turn releasing it to the desiccant. Throwing the desiccant into the line upsets the original equilibrium, but as the unit continues to operate, we reach a new equilibrium, this time with most of the water in the desiccant and very little in the refrigerant.

The point to remember is that **the water is still in the unit.** It has not been destroyed or changed. But the practical equilibrium has been altered to the degree that the refrigerant is dry to a safe level.

Now, if the temperature of the desiccant should rise, the vapor pressure of the adsorbed water will increase and some moisture will tend to pass into the refrigerant which can hold more water at higher temperatures. The vapor pressure will be much less than it would be for the same amount of free water at the same temperature, but it does increase as the temperature increases.

This is a property common to all physical-type desiccants.

Thus we see that the sole function of the physical-type desiccant, like activated alumina or silica gel, is to continually disturb any undesirable equilibrium and re-establish another equilibrium which results in a refrigerant dry enough to give trouble-free operation.

Next, we will discuss the various desiccants available from the standpoint of the basic information we have discussed.

WHAT . . WHEN . . WHERE — *A Guide to Coming Events of Interest*

American Gas Association Convention
Oct. 7-9, Kiel auditorium, St. Louis.

Milk Industry Foundation Convention
Oct. 21-23, San Francisco.

National Electrical Manufacturers Association Meeting
Nov. 11-15, Traymore hotel, Atlantic City.

American Society of Refrigerating Engineers Meeting
Nov. 14-16, Shoreland hotel, Chicago.

Refrigeration & Air Conditioning Contractors Association Convention
Nov. 16-18, Drake hotel, Chicago.

Air Conditioning & Refrigeration Wholesalers Meeting
Nov. 17-18, Morrison hotel, Chicago.

Refrigeration Service Engineers Society Convention
Nov. 16-19, Hotel Morrison, Chicago.

National Commercial Refrigerator Sales Association Convention
Nov. 18-19, LaSalle hotel, Chicago.

National Association of Practical Refrigerating Engineers Convention
Nov. 18-21, Del Prado and Sherry hotels, Chicago.

10th Exposition of the Air-Conditioning & Refrigeration Industry
Nov. 18-21, International Amphitheatre, Chicago.

National Warm Air Heating & Air Conditioning Association Convention
Nov. 18-22, Hotel Morrison, Chicago.

National Electrical Contractors Association Convention
Nov. 13-16, Cincinnati.

REMOVE THE SCALE... SAVE THE EQUIPMENT!

"VIRGINIA's" new solid scale remover is pronounced safest for use on dip zinc coated, galvanized and aluminum water-cooled equipment

LOOK FOR THIS SEAL OF SAFETY

Every drum of new "Virginia" solid scale remover bears the seal of safety which relieves you of worry about equipment injury. Use "Virginia" to restore peak heat-transfer efficiency of your water-cooled equipment—quickly, economically. Avoid costly shutdowns—eliminate the personal hazards of handling corrosive liquids. *Insist on the new, improved "Virginia" formula with the seal of safety atop the drums.* Packed in 10 and 50-lb. drums.

STOP SCALE FORMATION with "Virginia" Water Treatment and Corrosion Inhibitor. Holds scale-forming solids in suspension or solution, greatly reducing scale buildup on metal surfaces; protects against corrosion. Packed in 6 and 50-lb. containers.

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OH, OH··· I KNEW HE WAS SELLING SOMETHING WHEN HE CAME OUT OF HIS CAVE WITH THAT PIANO-KEYS SMILE ON HIS KISSER···
WHEN I ASKED HIM TO TAKE A TEN-CENT CHANCE FOR MY KID'S BASEBALL TEAM··· HE SAID THERE WAS AN OFFICE RULE AGAINST GAMBLING, THE ☆@!#$%!!
LAST TIME··· HIS OL' LADY WON THE HEAPMOBILE CAR··· DIDJA EVER NOTICE THAT INK ERADICATOR IN HIS OFFICE?
ONE OF THE PRIZES IS AN AIR-CONDITIONER··· HE'D LIKE US TO WIN IT AND INSTALL IT IN HERE···
J.P. BIGDOG
TIMMY HAIG
YOU NOT ONLY GET YOUR ARM TWISTED·· YOU'RE SUPPOSED TO SMILE AND LIKE IT···
Thanx AND A HAT TIP TO KENNY JASON, ARROWWOOD RD., COHASSET, MASS.
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Motlied Small Business Profile Emulsified by Motley

SMALL BUSINESS itself is not big business in miniature. Rather, it has an entirely different range of problems. As a matter of fact, many small businessmen would not want to be now—or ever become—big businessmen.

They are rebels against uniformity, conformity, and "The Organization Man." They are the hopes and yeast of our American prosperity brew, furthermore.

This shrewdly unique "profile" of the American small businessman was thrown up for scramble by Arthur "Red" Motley, president of *Parade* magazine (and America's foremost sales personality) at President Eisenhower's Conference on Technical and Distribution Research for the Benefit of Small Business.

More than 90% of the business organizations in our nation can be considered small, he observed. "The fact that President Eisenhower has sensed the importance to them of sales (distribution) research, and of technical research to discover new methods and new products, cannot fail to have a vital and long-term effect on national business activity.

"Selling, however, is the key to maintaining employment, income, and profits successfully. More than 52% of the work force now employed in the U. S. is engaged in sales or service."

In order to sort out (in advance of the President's Conference) basic distribution problems which confront small businessmen, magnetic "Red" Motley masterminded and supervised a special survey hopefully designed to reveal a typical small businessman. The researchers couldn't find one.

Every small businessman is highly individualistic, it was discovered. Frequently this fellow may reject an "Organization Man" job in a big business. He derives a high degree of satisfaction from the hazards and challenges of his own little enterprise and enjoys playing all the instruments in his business band so long (and as often) as he can. Individualism is the key to his character.

However, the truly successful small businessman realizes that his special problems, coupled with his desire to remain manageably small, do not permit him to be complacent, to work less hard or less intelligently, or fail to use all available tools of research, especially in the field of marketing and man-to-man selling.

A small businessman who instinctively resists the trappings and jargon of formal market research actually may be doing market research now—often without recognizing it as such. For example:

A manufacturer who interviews his salesmen about field conditions, the restauranteur who checks plates to see what varieties of food are left, the department store buyer who spends time on the floor talking with customers—all these are doing conscious or subconscious market research.

Small businessmen can share the results of successful distribution research simply by listening to oral case histories at association meetings, and by reading competent business publications for which they pay incredibly small subscription prices.

Gold mines of research information exist in many places, waiting to be dug out, Mr. Motley adds. They are often revealed *understandably* in the trade and business press. Other rich sources: university business schools, and big businesses eager to share expensively-winnowed information with their suppliers and retailers.

As a patriotic duty, present big users of market and sales research should help show small businessmen (in manufacturing, retailing, and service) how to obtain research information at prices they can afford, and how to make use of it once it is secured, Mr. Motley proposed.

Thus American prosperity can be assured and advanced.

This conference on Research for Small Business should be a continuing challenge and an opportunity, *Parade's* president asserted. "Its principle is based on fact, not theory; upon success, not failure; upon individual action, not legislation; upon courage and hope, not gloom," he concluded rhythmically.

No matter how small or remote your business enterprise may be—Pa and Ma store in a big city, all-purpose contractor or dealership in a small town, or whatever—you can up your profits, and contribute more to America's continuing progress, by using your noodle. Hitchhike to success on already-paid-for RESEARCH!

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'The Conscience of the Industry'

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Small Business Conference--

(Continued from Page 1)

managers. From our industry came the peripatetic Upper Darby, Pa., appliance dealer Mort Farr; Crosby Field of Flakice; Wade Cloyd of American Radiator; and H. F. Swenson of Sweden Freezer.

We spent three days and two nights kicking this subject around. Much of the time it was just kicking; but a surprising amount was accomplished. One example:

PROFESSORS AVAILABLE FOR SHORT-TERM PROJECTS

Compilation of a list of university professors who are specialists on an enormous number of subjects, and whose advice is available to small businessmen for modest fees. Supposing there's a fly in your ointment. You call in this Ph.D. He knows how to remove it and does. You pay him a few hundred dollars, and he goes back to his classroom. He's happy because he needs the dough; you're happy because you didn't have to hire a Brain full time year around.

Many other solid ideas were developed, which you'll be reading about in coming issues of the NEWS. These ideas, it generally was agreed, will have to be worked out and followed through by regional meetings of this nature, by trade associations, and by business papers. *(Editor's note:* this is one case in which we didn't mind having the buck passed to us. Business research is, fundamentally, our business.)

SMALL BUSINESS CAN ECONOMICALLY DO RESEARCH

Big point winnowed from the chaotic discussions which occurred between previous strangers:

The small businessman CAN employ research at modest cost. He doesn't need a laboratory, nor an expensive research staff. Just one man thinking ahead full time. Or part-time help from men who already know the answers, or where to find them.

Big business not only has its own laboratories and technical and marketing staffs. Also it employs professional consultants, utilizes government bureau information, and submits problems to university research scientists. Little business previously hasn't known how to find or interpret obscure government research, or take advantage of help from university professors.

The latter two avenues of assistance are available to small business at prices it can afford, however. Already the little businessman has subsidized them, in part, with his federal and state income tax payments. So, it makes sense for him to exploit this low-cost technical (labor-saving, product redesigning) and distribution (how to meet new types of competition) assistance.

In keeping with his decentralized-government (do-it-yourself) policy, President Eisenhower suggested this conference. It is his idea that small business would help itself better than could Big Brother Government. Conferees paid their own expenses, plus a $25 registration fee, and ran the show themselves.

IKE URGES FIRMS TO EXPLOIT GOVERNMENT SOURCES

Ike urged small concerns to exploit the government's store of technical information instead of asking for "a new bureaucracy." On that we were with him 100%.

However, the complaint of small business that it is being cut off from capital to expand strayed into other talks. It was difficult to focus attention of the conference on the subject of Research—which it came to explore.

"Most small businessmen feel that they are at a distinct disadvantage against larger firms in obtaining funds needed for growth," Lyle M. Spencer, president of Science Research Associates of Chicago, observed. And

(Concluded on next page)

For more information about products advertised on this page use Information Center, page 14.

Conference--

(Concluded from preceding page)

Dr. Charles N. Kimball, president of the Midwest Research Institute, Kansas City, reported that a recent survey of small businessmen put credit at the top of their problems.

J. Wilson Newman, president of Dun & Bradstreet, replied that "credit is a privilege which must be earned. When credit is to be restrained for the national good, who is to say that it should not be used by those who have earned it and have shown ability to use it wisely?"

His firm had just made a survey, too, and had discovered that banks were lending short term funds to smaller concerns, and were sticky only about longer loans. (That, of course, is the kernel. For expansion you need long-term money.)

RESEARCH DEEMED A MUST FOR SMALL FIRMS

Several speakers deplored what they said was the small businessmen's mistaken belief that research is too rich for their blood. "It is an absolute 'must' for small business," asserted Administrator Wendell B. Barnes of the Small Business Administration (which is chiefly a lending agency).

Research can stimulate the growth of new small businesses, added Commerce Secretary Sinclair Weeks, and they are "essential for national economic growth." Dr. Raymond J. Saulnier, chairman of the Council of Economic Advisers of the Executive Office of the President, explained how the government aids small business research.

GOVERNMENT AIDS SMALL BUSINESS IN MANY WAYS

"There are many ways in which the Federal government assists small business firms in the field of technical research. These forms of assistance may be conveniently grouped under three headings: first, the government conducts extensive and diversified research activities in its own facilities; second, the government supports or facilitates research conducted by business firms and other organizations on their own premises, and third, the government compiles and disseminates a large amount of technical research information derived from a variety of sources, public and private," he summarized.

"The Department of Defense, whose research and development expenditures exceed those of all other agencies combined, does more than half of its work under contract with private firms."

RESEARCH CARRIED ON BY FEDERAL AGENCIES

The Atomic Energy Commission, whose research expenditures are second only to those of the Department of Defense, conducts a good part of its own work. However, these facilities are operated under contract by private businesses and institutions. Other Federal agencies, such as the National Bureau of Standards, the Bureau of Mines, the Weather Bureau, the Maritime Administration, the Veterans Administration, the Federal Housing Administration, and many others conduct research in their own facilities.

Results of all this research (which cost taxpayers billions of dollars) can find their way into civilian uses. And often do. "Findings of Federal research projects are made available in government publications and in suitable trade and technical media. Provisions are also made for selected access to the results obtained in its classified projects," Dr. Saulnier stated.

Second of the three general ways in which the Federal government aids small business in technical research is by sponsoring or facilitating inquiries conducted by private firms and institutions. More than half of the research budget of the Department of Defense is for activities of this nature. In effect, this constitutes subsidizing private company research.

TAX LAW FAVORS PRIVATE RESEARCH

Private research and development activity also is encouraged by certain features of our tax law. The 1954 revision of the Internal Revenue Code made explicit the option of expensing rather than amortizing research and development outlays.

Another provision allows income derived from the sales of a patent or patent application to be treated as capital gains.

Small firms as well as large are benefitting from the accelerated tax amortization program. Small firms receive certificates of necessity which permit a five-year write-off up to 45% of laboratory building costs, and up to 70% of equipment costs. Large firms are allowed 40% and 65%, respectively.

Finally, the Federal government helps small business in the field of technical research by the compiling and printing of research findings from both private and public sources.

Federal technical information can be found in the Small Business Administration abstracts of private and government patents. The SBA also answers requests for information and advice on technical research matters. The Office of Technical Services of the Department of Commerce will send copies of all unclassified government research reports of value to science and industry to anyone who requests them.

Among other formal speakers were Arthur Motley, president of *Parade* magazine; D. Maynard Phelps, Professor of Marketing at the University of Michigan; Guy Suits, Director of Research for General Electric; Governor Lan Dwinell of New Hampshire; Dr. Eric A. Walker, president of Pennsylvania State university; Wilbur Brucker, Secretary of the Army; and Admiral Lewis Strauss, chairman of the Atomic Energy Commission.

Under the able co-chairmanship of "Red" Motley and Dr. Walker, the conferees split up into night-time seminars ("bull sessions") to brainstorm such topics as:

How to obtain and keep intelligent personnel.

How to acquire, interpret, and use information available from government and universities.

How to establish procedures for product development.

How to "guesstimate" the future (forecast trends, sales, and profits for your business one year hence and longer).

How to convert customer complaints into profits. And so on, far into the night.

The NEWS will report more information useful to subscribers (produced by this conference) in subsequent issues.

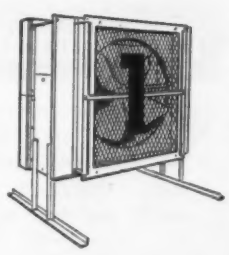
For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

ONLY KRAMER UNICON + WINTERSTAT* GUARANTEES ALL 4

MAXIMUM LIQUID PRESSURE AT EXPANSION VALVE IN WINTERTIME



Only the Kramer UNICON plus WINTERSTAT guarantees the full refrigerant pressure *at the expansion valve* for full cooling capacity — even at below 0°F outdoors — *automatically!*

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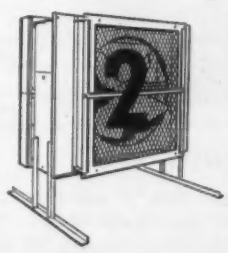
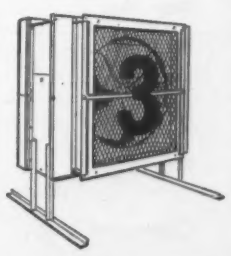


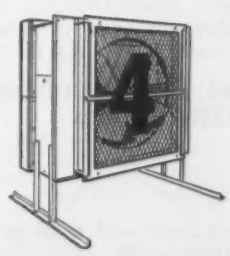
Only Kramer UNICON plus WINTERSTAT guarantees maximum condensing capacity in summer. In hot weather, the patented WINTERSTAT is out of the refrigerant circuit, permitting normal drainage from the condenser without restriction. This assures maximum condensing capacity in summer — *automatically!*

PROMPT DEFROSTING AT ANY OUTDOOR TEMPERATURE



The use of UNICON plus WINTERSTAT makes Kramer THERMOBANK the only low temperature system that can guarantee operation and complete defrosting at any outdoor temperature—even 0°F or lower — *automatically!*

IMMEDIATE COMPRESSOR START-UP REGARDLESS OF OUTDOOR WINTER TEMPERATURE



Only Kramer UNICON plus WINTERSTAT (using modification #1) ensures positive and immediate compressor start-up with pressurestat operating the system, regardless of outdoor winter temperatures at the UNICON and regardless of length of compressor lay-off — *automatically!*

**UNICON is a remote type air-cooled condenser WINTERSTAT is a year 'round automatic head pressure control*

WRITE FOR BULLETIN U-210-L

KRAMER TRENTON CO. • Trenton 5, N.J.

43 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

For more information about products advertised on this page use Information Center, page 14.

Packaged Meat Merchandiser Features 'Lo-Front'

—KEY NO. G-1010—

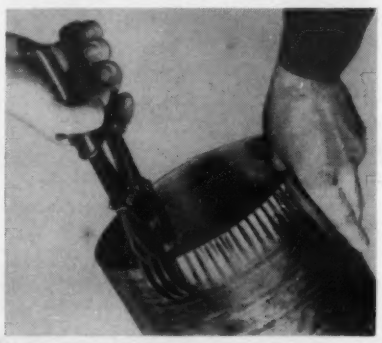
MARSHALL, Mich.—A series of new self-serve refrigerated display cases designed specifically for merchandising packaged red meat, featuring 34-in. "lo-front" futuramic styling, has been announced by the Sherer-Gillett Co. here.

The 4900 line is available in both single and double-duty styles. "Eye" and "buy" appeal is a claimed top characteristic of the new merchandisers, which come in 8 and 12-ft. display lengths.

Standard equipment on the new line is extruded aluminum, multi-groove price-tag molding.

Pipe Crimper Provides Power with Little Effort

—KEY NO. G-1011—



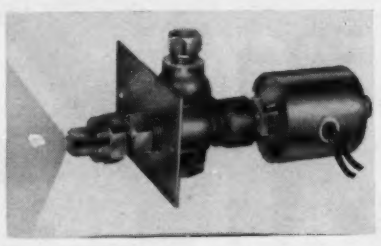
BUFFALO—Rugged and lightweight, the new model 500 compound leverage pipe crimper introduced by Niagara Machine & Tool Works, is claimed to multiply hand pressure to provide amazing crimping power with minimum effort.

With capacity up to 20-gauge galvanized steel, this handy tool makes it easier to reduce the diameter of sheet metal pipe. Featuring 1¼-in. blades, two crimps are made each time jaws are compressed.

Pliable, vinyl plastic hand grips with special stop posts prevent hand slippage, and provide finger clearance when working against a bench or other surface.

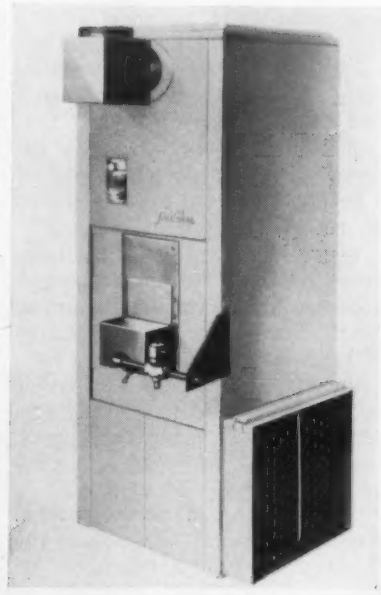
Humidifier Operates When Furnace Blower Does

—KEY NO. G-1012—



PITTSBURGH — Now available to homeowners from Lewbill Industries, Inc. is a lowcost humidifier for gas furnaces claimed to have the capacity to maintain comfortable humidity during the winter months for a dwelling.

This unit is of the atomizing type and operates only when the furnace blower is in operation.



Warm Air Furnace Line Is Adaptable

—KEY NO. G-1013—

GARWOOD, N. J.—Easy adaptability to all types of new home construction is the principal feature of three series of warm air furnaces announced here by Thatcher Furnace Co.

Thatcher "532" series are oil-fired horizontal units which can be ceiling suspended or tucked away in crawl spaces or unused attic corners. A combination of modern oil burner and specially-designed heat exchanger of heavy-gauge steel, the 532 features a high efficiency air filter to provide purified air and a minimum of dust, the company said.

Designed especially for new construction is the "554" budget series of gas-fired winter air conditioners. A completely automatic vertical unit measuring 67 in. high and 23 in. square, it has a single port upshot gas burner for maximum heat with minimum fuel.

Compact vertical oil-fired furnaces comprise the new "553" budget series for easy installation in utility rooms or other small spaces of basementless homes.

Day's Dishes Washed By Mobile Unit

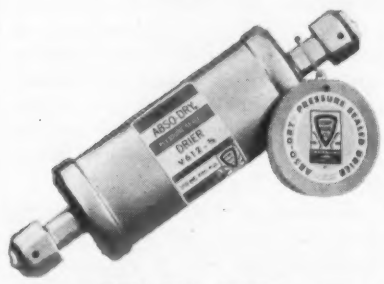
—KEY NO. G-1014—

ST. JOSEPH, Mich.—Dishes for an entire day may be washed, stored, and rolled to the dining area in a new "RCA Whirlpool" custom mobile dishwasher introduced by Whirlpool Corp.

The new mobile dishwasher is finished in white enamel with rich accents of chrome, gold, and charcoal gray. The unit measures 21¾ in. in width, 25 in. in depth, and 34 7/16 in. in height. It may be rolled to the table for loading, to the sink for doing the dishes, and under a counter for storage.

No installation is required, since one unit incorporates a hose connection for hot water and a hose drain for used water. The hose unit and a 5-ft. electrical cord are concealed in a rustproof receptacle at the back of the cabinet.

Reactivated Driers Are Pressure-Sealed



—KEY NO. G-1015—

MELROSE PARK, Ill. — Henry Valve Co. recently announced a complete new line of patented "Abso-Dry" pressure-sealed driers and filter-driers. All Henry wholesalers have been furnished with a counter or wall display showing the driers in relief and full color.

To obtain maximum drying efficiency, Henry now thoroughly reactivates each drier, and, by an exclusive, patented process of manufacture, provides positive indication, by pressure sealing, that the drier is tight, dry, and factory-fresh on reaching the user, the firm claimed. When the end connection seal of a new drier is loosened prior to installation, there is a hissing sound due to the escape of dehydrated air.

Adds Foam-Plastic Insulated Panels

—KEY NO. G-1016—

PITTSBURGH — Aluminum Co. of America recently announced its entry into the business of producing foamed-plastic insulated panels, ready for fabrication into a multitude of products.

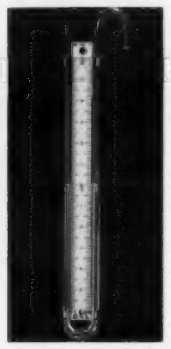
Utilizing a newly developed process, Alcoa now is preparing to mass manufacture the "plank" laminates by fast, continuous methods, making them available in volume for the refrigeration and kindred industries, it was stated.

The process for laminating aluminum, wood, glass, porcelain, or other materials to a rigid core of foamed plastic offers broad possibilities, the firm said.

Announces Low-Cost Manometer Line

—KEY NO. G-1017—

MICHIGAN CITY, Ind.—A new line of low-cost manometers for general use as light pressure and vacuum indicators was announced recently by the F. W. Dwyer Mfg. Co.



Because of its economy, versatility, and high degree of accuracy, the manufacturer's series 1225 manometer is suited for determining velocity and static pressures, leakage, fan and blower efficiency, resistance through filters, gas pressure, and many other measurements, the firm states.

The instruments are now available in three sizes (6, 12, and 18 in.) with either straight or inverted "U" connections for rubber tubing at the top. Double columns are constructed of clear heavy-walled Butyrate plastic tubing.

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

NEW KMP MOISTURE MAGNET
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FINEST REFRIGERANT DRIER MADE

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Molecular sieves, the newest class of adsorbents, are the most efficient desiccants on the market . . . have the ability to adsorb at high temperatures up to 19 times more water.

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Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

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What's New or Current Literature Available

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

Name . . . . . Title . . . . . .
(Please Print)

Company . . . . . .

Street . . . . . .

City . . . . . Zone . . . . . State . . . . . .

Type of Business . . . . . .

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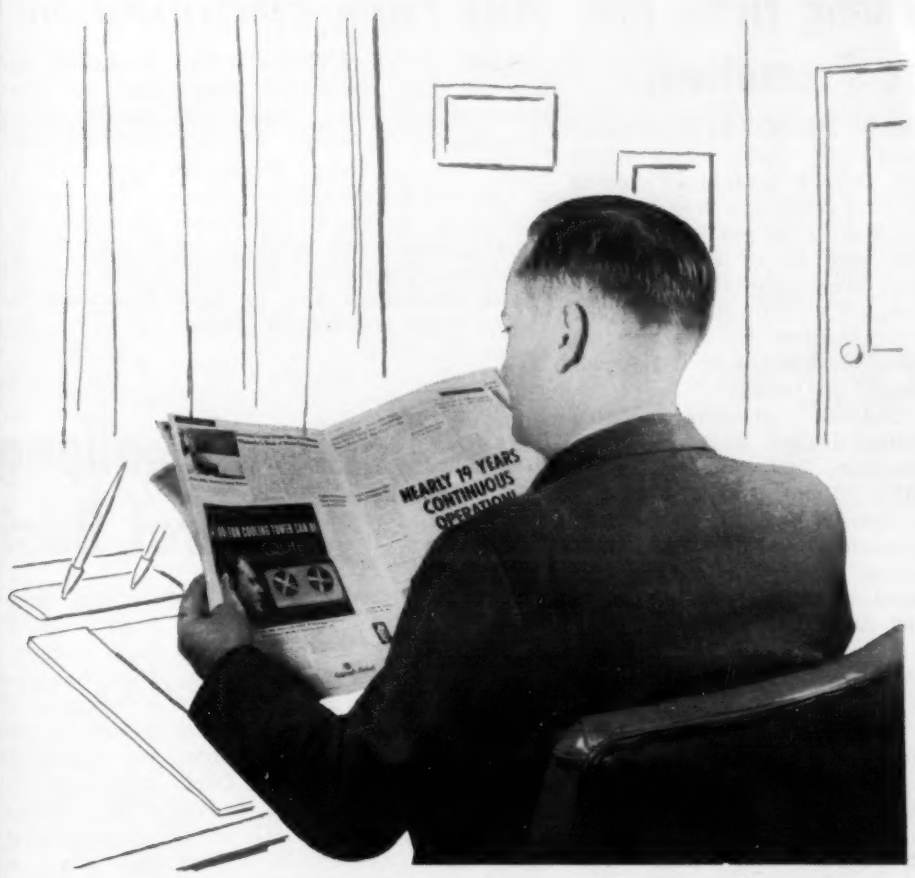
Readers Service Dept.
450 W. FORT ST. DETROIT 26, MICHIGAN

For more information about products advertised on this page use Information Center, page 14.

A double duty issue--with double-barrelled impact

TELLS WHAT TO SEE — WHERE TO GO
FOR THOSE AT THE SHOW



BRINGS THE WHOLE SHOW
TO THOSE WHO CAN'T GO

News Show Issue

November 18, 1957

Your advertisement in the Show Issue, 10th Exposition of the Air Conditioning & Refrigeration Industry, can assure you double coverage—it will be read by those who attend the Show and those who stay at home.

FOR THOSE WHO GO . . .

Your customers and propects will use the NEWS Show Issue as a guide of what to see—where to go. They'll want to know where you are, what you are exhibiting. After the Show, they'll use the Show Issue as a "reminder" for those products and services they have seen and placed on their "must investigate" list.

If you are not exhibiting, use the NEWS for your exhibition space. But in either case, be sure to reserve your space now.

FOR THOSE WHO STAY AT HOME . . .

Your customers and prospects who cannot attend the 10th Exposition of the Air Conditioning & Refrigeration industry will use the NEWS Show Issue to learn all about it—to give them an armchair view of the entire Exposition.

For those who go and those who stay at home, the NEWS Show Issue will be must reading. There will be added distribution at the Show and added readership at home. So be sure to reserve your space for the November 18 Show Issue. Contact your local representative or write direct.

ISSUE DATE: NOV. 18

LAST FORMS CLOSE NOV. 6

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JOE SULLIVAN.

What's Going On in HEATING

News of Methods, Products, People

Plumbing, Heating, Cooling Firms Aid HIC Promotions

NEW YORK CITY — Plumbing-heating-cooling firms which took such a prominent role in the OHI campaign will have an opportunity to participate even more extensively in the bigger, more promising 1958 program of the Home Improvement Council, according to Don Moore, executive director of OHI's permanent successor.

"Support of plumbing-heating-cooling dealers was largely responsible for the success of OHI's 22-month trial venture," he asserted. "The new, more comprehensive program — promotion and public relations aimed directly at the consumer —is dependent on your continued backing."

Member firms will be provided with "membership identification" packages including decals, reproduction proofs, and mats of the HIC membership seal; a certificate and ideas on how to make HIC participation most effective; and other items.

A uniform dues structure has been established for all segments of the industry. Yearly membership has been set at $50 for wholesalers and jobbers; $50 for dealers and contractors with 25 or more employes; $25 for dealers and contractors with less than 25 employes. Half of all dues received will be set aside toward organization and operation of local council chapters, according to the announcement.

Dues for 1958 membership can be sent to the council's new headquarters, 2 E. 54th St., New York 22, N. Y.

Heat Pump, Electric Space Heating Talks To Headline AIEE Farm Electrification Conference In Minneapolis

NEW YORK CITY — "The Use of Electricity for Space Heating" and "Heat Pump Application on the Farm" are two of the subjects to be discussed at the forthcoming Farm Electrification Conference sponsored by the American Institute of Electrical Engineers.

The conference will be held at the Hotel Nicollet in Minneapolis Oct. 29-31.

Electric space heating will be discussed at the Wednesday, Oct. 30 session by Buford H. Martin, commercial and industrial engineer, Tennessee Valley Authority.

The heat pump talk will be presented at the same session by T. F. Hildebrand, agricultural development engineer, American Gas & Electric Service Corp., New York City.

Walter J. Barrett, president of the AIEE, and R. G. Zook, assistant administrator, Rural Electrification Administration, will be the principal speakers at the conference.

Barrett will address the luncheon meeting Tuesday. His subject will be "Organization of the Engineering Profession." Zook will speak at the closing session Thursday. His address is on the subject of "The Engineers' Challenge in Rural Electrification."

Fuel Dealers Challenged To Get Into 'Natural Business'--Air Conditioning

COOPERSTOWN, N. Y. — "Diversify into year-round air conditioning if you expect to survive."

This challenge was hurled at assembled New York State Fuel Dealers Association at annual convention here by B. F. Dart, sales manager, Heating & Air Conditioning Div., W. G. Morton, Inc. of Albany, N. Y., an associate manufacturer of Mathes Co.

"If you do not do this, and do it promptly, you will lose your share of this comfort business to more aggressive merchandisers," Dart warned. His company is also a distributor of anthracite and bituminous coals.

Any business that does not progress, does not simply stand still, Dart cautioned, it retrogresses. Therefore, "it is natural for the fuel dealer to look to other fields of diversification of his interest."

As a way to diversify, Dart explained, "turn your attention to the one business that is closely allied to that which you have been in for years. A business that is a natural for you—a business of conditioning the homes in your marketing area for comfortable year-round living."

With a knowledge of heating requirements and prospects in the many customers serviced over the years, Dart told the fuel dealers that "there is no secret, no difficult problem in figuring cooling."

He advised them that the summer air conditioning load comes at a time when fuel business is at low ebb. "The additional labor involved in summer cooling can help you in keeping an even labor load throughout the year. It also provides you with sales volume and it can mean a substantial sales volume at a time when your volume on fuel is down."

Dart pointed out that air conditioning is a comparatively new business. It's better, he continued, to "jump into it now" rather than let someone else take it away.

"Some of you in the past have been inclined to sit back and watch new developments," Dart prodded, "and wait until someone else has skimmed the cream from the top before you decide to make a move. Let us not repeat some of our past mistakes and let this 'infant' business be captured by some other segment of the retail field. . . ."

He pointed to an article in the Aug. 12 issue of AIR CONDITIONING & REFRIGERATIION NEWS reporting that "in the middle of a coal field a Colorado dealers sells home air conditioners and gas furnaces by luring prospects with coal furnace parts inventory." Dart explained what that dealer accomplished, according to the article.

"This is what your aggressive competition is doing," he alerted his listeners. "In this particular case, the dealer is taking business away from coal dealers and this will happen in your town unless you take some aggressive steps to do something about it now."

In discussing markets for year-round air conditioning, Dart said, in part: "The brightest future in the year-round comfort conditioning business is the installation of central units. More and more people are find-

(Concluded on next page)

BHC To Outline 'Precedent-Setting' Push Oct. 29-30

NEW YORK CITY—The second annual meeting of the Better Heating-Cooling Council is expected to center around four major features, according to Franklin Greene, executive director.

Scheduled for Oct. 29-30 at Hotel One Fifth Avenue here, the features will stress an expanded 1958 program, expected to be the fullest yet scheduled by the manufacturer-wholesaler-contractor group.

FEATURES OF MEETING

Features of the meeting will include: first "rush" preview of the new BHC color cartoon movie for TV use; report on all special promotion projects and results of the 1957 program; a new precedent-setting promotion at all levels of the industry for hydronics; election of officers; and formulation of the 1958 over-all program.

In addition, special emphasis will be given industry and consumer sales efforts at the meeting when specialists will outline how small and medium-sized companies can both expand present markets and open new sales areas through new or improved methods.

OTHER SESSIONS

Other session of the two-day meeting will include reports by committee chairmen and meetings of the Public Relations Advisory Committee and the board of directors. The Council's PR Advisory Committee is made up of one representative from each of the 47 BHC members.

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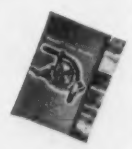
See your supply house—or write for free folder today.



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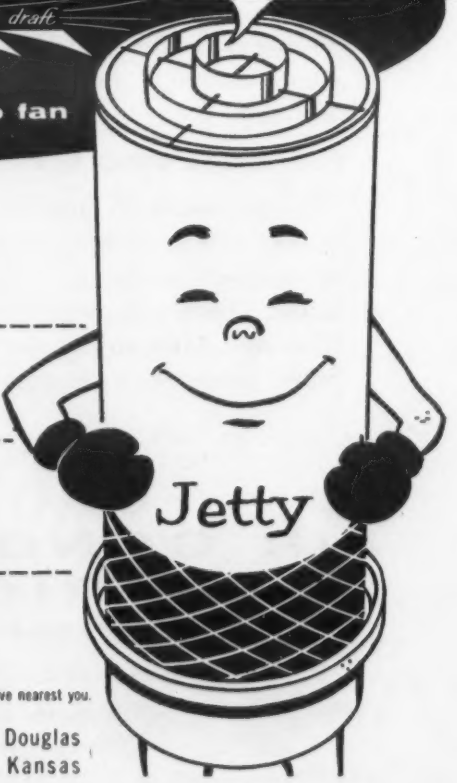
New Champ!

KOCH JET forced draft COOLING TOWER

forced draft—no fan

MEET SOME MORE OF THE BOYS IN MY CORNER!



Sanford Mechanical Equipment Co., Inc.
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Write today for the name of the Koch Representative nearest you.

KOCH ENGINEERING CO., INC. | 321 West Douglas Wichita, Kansas

For more information about products advertised on this page use Information Center, page 14.

DISPLAY the W. G. Morton Inc. had at the New York State Fuel Merchants convention at Cooperstown, N. Y. is claimed to be the first time coal-fired furnace was shown with air conditioning attached, at least in the east.

Fuel Dealers Challenged--

(Concluded from preceding page)

ing that central units are the 'ultimate' in comfort conditioning and the acceptance of these units is growing."

However, he added, "in the near future years you will find that first-year customers will perhaps buy a window unit or two and then up-grade to a central system."

Dart cited the du Pont residential air conditioning survey which indicated that 85% of all purchasers of central residential units "bought" and were not "sold" them. He then pointed out benefits people listed in the survey as to why they liked air conditioning.

COOLING MARKET

"Biggest market in comfort air conditioning," Dart stated, "is the 25 million homes in the U.S. that presently have central heating sysetms. About 13 million of this 25 million are heated by warm air heating plants which in a good many cases can easily be modified to add summer air conditioning at very low expense."

Present developments in the air conditioning business make it simple to install summer air conditioning in the 11 million homes with wet heat.

Dart explained where, according to the survey, owners of central air conditioner systems bought the units. He said 12% bought them from a plumbing and heating contractor, 4% from an electric appliance dealer, 11% from a warm air heating dealer, 3% from a sheet metal contractor, 2% miscellaneous, and 68% bought them from an air conditioning engineer or contractor.

"Now," he continued, "let's take a look at this year-round comfort air conditioning business as far as you, the fuel dealer, is concerned. You more than anyone else in your town know the heating requirements of the people in your area. You have access to their homes and you know what condition their heating plants are in. So, it's natural for you to go into the field of selling these people replacement equipment and when you sell replacement equipment, it is a natural for you to sell them the add-on equipment necessary for year-round comfort conditioning.

"What does it require of you?" he queried. "First it requires from you a decision—a decision that you are going to be the factor in your marketing area in this new business of the future."

Dart warned the fuel dealers that they must decide now. "The longer you wait, the less your chances will be of getting a foothold in this profitable business," he declared.

Firm Enlarges Heating, Engineering Research Facilities

MILWAUKEE—New and enlarged facilities for heating research and engineering at the Mueller Climatrol division plant of Worthington Corp. here were shown to suppliers, consulting engineers, and customers recently.

The firm has remodeled a 10,000-sq. ft. building into a laboratory, display area, classroom, offices, and drafting room at a cost of about $125,000. The building formerly housed the Mueller air conditioner assembly line, which outgrew the quarters and has been moved to another location in the plant at 2005 W. Oklahoma Ave.

Otto Ress, manager of engineering, said that the moves had resulted in laboratory facilities being doubled and office space being increased by approximately 75%.

The shifts were cited as an indication of changes in the heating field. A decade ago a large share of Mueller's output was coal burning furnaces, now the larger share of its production is devoted to air conditioners.

F. J. Nunlist, Mueller executive vice president, said the firm's cooling laboratory will be moved to a location adjoining the heating laboratory early next year.

Floor, Wall-Mounted Radiant Heater Made for Trailers

SYRACUSE, N. Y. — Carrier Corp. announced the introduction of the "Mobileray," a new radiant heater for small coaches and travel trailers.

Loren Fletcher, vice president in charge of Carrier's Allied Products Div., said the new heater already is in production and is being made available through mobile home manufacturers, dealers, and suppliers.

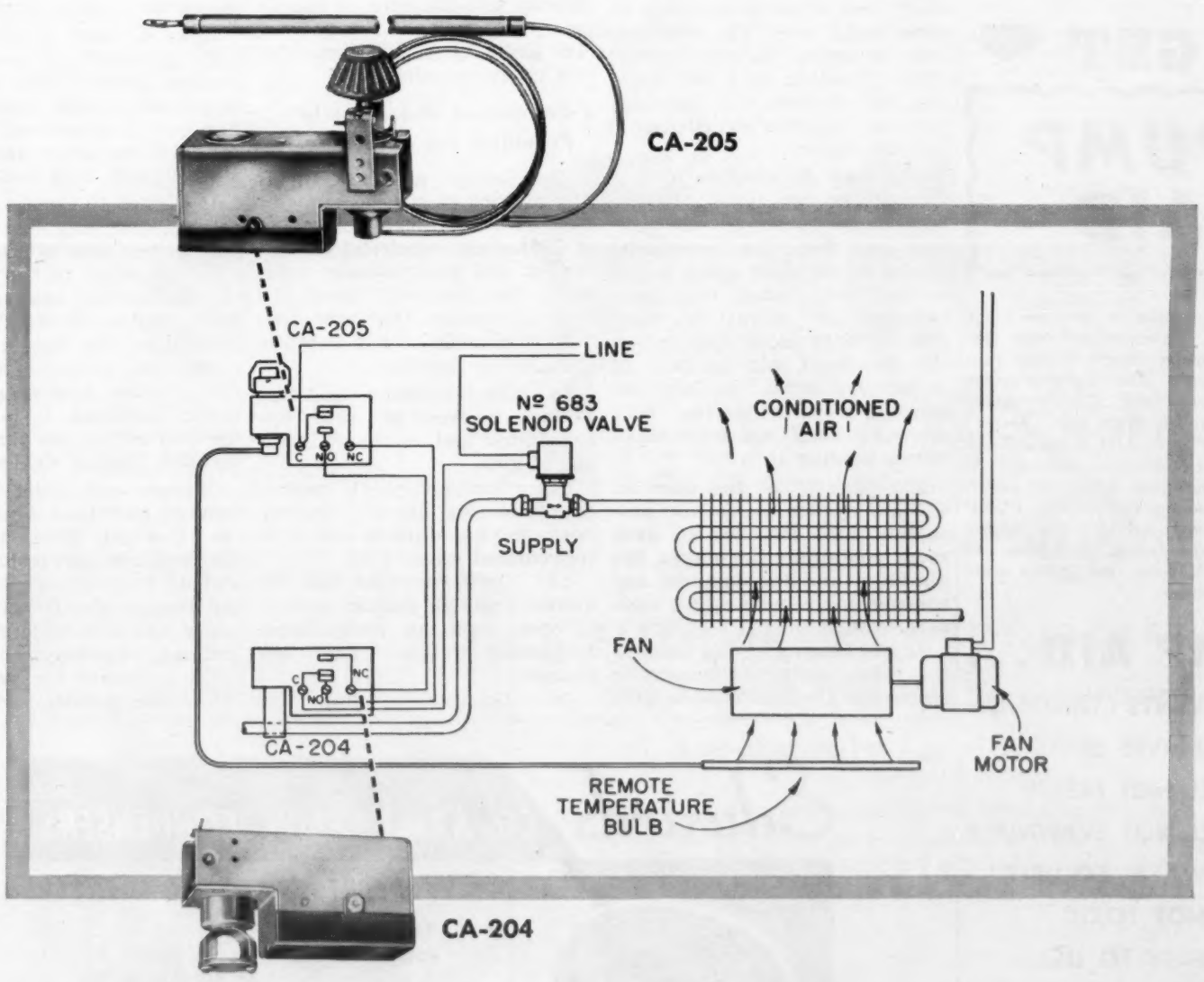
Fletcher reported that the Mobileray is being produced in two models for floor mounting or wall installation.

Both are available with manual or automatic controls and can operate on either natural or LP gas.

The wall-type Mobileray can be recessed into a small opening. It features a louvered front panel and gives up to 30,000 B.t.u. while the floor-type Mobileray has capacities up to 16,500 B.t.u., it was stated. Safety features include a safety vent and an automatic shutoff, according to the manufacturer.

A Combination Hard to Beat...

Detroit's CA-204 Indexer Control and the CA-205 Air Control



In fan and coil year 'round systems, where hot or cold water is piped to individual air conditioners located in separate rooms, the combination DETROIT CA-204 and CA-205 Thermostatic Controls allow individual selection of the temperature desired from each unit.

The CA-205 controls room temperature as desired, the CA-204 "indexes" to summer or winter operation depending upon the water being furnished. This combination is hard to beat in performance and in initial cost.

For complete engineering data, write today for Bulletin 269.

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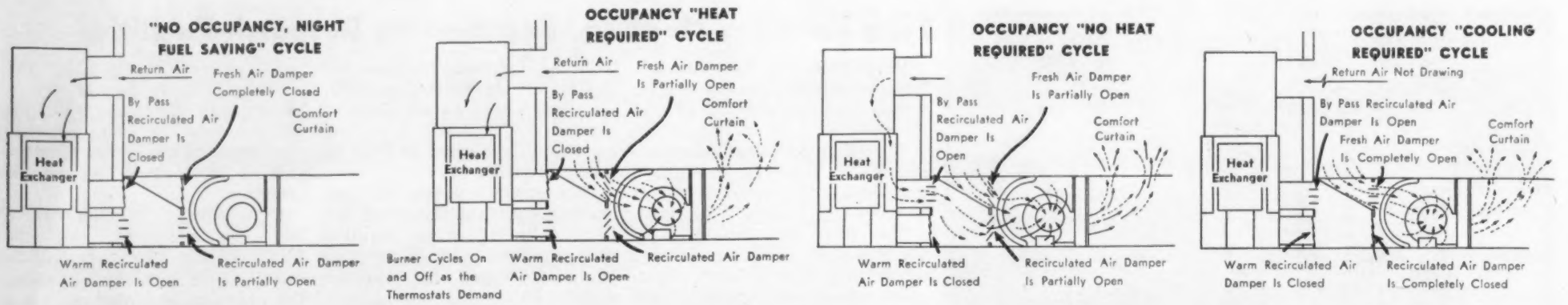
"NO OCCUPANCY, NIGHT FUEL SAVING" CYCLE
Return Air
Fresh Air Damper Completely Closed
By Pass Recirculated Air Damper Is Closed
Comfort Curtain
Heat Exchanger
Warm Recirculated Air Damper Is Open
Recirculated Air Damper Is Partially Open
OCCUPANCY "HEAT REQUIRED" CYCLE
Return Air
Fresh Air Damper Is Partially Open
By Pass Recirculated Air Damper Is Closed
Comfort Curtain
Heat Exchanger
Burner Cycles On and Off as the Thermostats Demand
Warm Recirculated Air Damper Is Open
Recirculated Air Damper
OCCUPANCY "NO HEAT REQUIRED" CYCLE
Fresh Air Damper Is Partially Open
By Pass Recirculated Air Damper Is Open
Comfort Curtain
Heat Exchanger
Warm Recirculated Air Damper Is Closed
Recirculated Air Damper Is Partially Open
OCCUPANCY "COOLING REQUIRED" CYCLE
Return Air Not Drawing
By Pass Recirculated Air Damper Is Open
Fresh Air Damper Is Completely Open
Comfort Curtain
Heat Exchanger
Warm Recirculated Air Damper Is Closed
Recirculated Air Damper Is Completely Closed

Lennox 'Living Laboratory' Tests 'Comfort Curtain' School Heating System

DES MOINES, Iowa—Lennox Industries, Inc. is currently operating a "Living Laboratory" research school building, equipped with the new "Comfort Curtain" classroom heating and ventilating system.

Situated adjacent to the company's Des Moines plant, the school gives the engineers an opportunity to conduct clinical research right in their own backyard, the company stated.

Saving Cited

According to John W. Norris, Lennox president, the Comfort Curtain equipment "will heat and ventilate school rooms in a manner that comes closer to the ideal system than any product introduced by the industry prior to this time." And, he adds, "it will do the job at a saving of from $800 to $1,200 per classroom over the cost of central heating and unit-ventilator systems."

In the Lennox system, it was explained, an air duct extends the full length of the wall with the most exposure. It is sized exactly right, the company said, to get equal outlet velocity at every one of many openings at window sill level. The combination of equal outlet velocity, proper location, and the shape and size of these vent openings produces superior distribution," Lennox stated.

The wall distribution system is made in two types, the announcement said: a wall duct, intended for the secondary grades where shelf space is not needed, and a shelf duct, constructed as attractive steel shelving with an air distribution chamber built into the back of it, believed to be "the least expensive way to acquire very adequate shelf space in those rooms needing it."

The "heart" of the Comfort Curtain system is the air processing unit installed in each room, containing the blower, the air filter, and the dampers and controls for regulating air temperatures.

In the Lennox Living Laboratory the heating equipment is housed in a separate room, purposely built double size to provide work space for researchers.

The heating system is a residential type forced air furnace with the warm air ducts extending out from the lower portion, at the sides.

Heat for the system is supplied by a direct fired heat exchanger, burning either oil or gas. These units are, in effect, vertical down-flow type "duct heaters." Return air from the classroom is brought in at the top of the heater and drawn down over the heater, into the distribution system, by the blower in the air processing unit. This occurs whenever there is a demand for heat.

Outside air, for ventilation and cooling, is taken through the outside wall of the building directly into the back of the air processing unit. A "very special" grille has been designed for this intake opening.

4 Conditions Adequately Provided for In System

The Lennox system controls the mixture of outside air with warmed room air by a system of dampers, electrically controlled and hydraulically actuated. The company cited the four conditions that are adequately provided for in Comfort Curtain air handling:

(a) No occupancy-night fuel saving; no fresh air used. Recirculation and minimum heating of air.

(b) Occupancy-heat required; fresh air damper slightly open, mixing outside air with recirculated warmed air.

(c) Occupancy—no heat required; fresh air damper partially open, room air recirculated, by-passing furnace heat exchanger.

(d) Occupancy-cooling required; fresh air damper completely open, warm recirculated air damper closed, by-pass recirculated air damper open. This cycle recirculates room air while mixing with it considerable fresh air.

For all normal school building construction, it has been the firm's experience that the normal building leakage provides adequate exhaust for the amount of air that is being pumped into the building through the operation of the Comfort Curtain systems.

In cases where the system designer prefers more positive exhaust, he can provide gravity vents from the hall with balanced dampers which open to provide building exhaust with the slightest pressure buildup inside the building, it was noted.

Since heating of auditoriums and gymnasiums presents a heating problem that is normal in general heating practice, Lennox uses conventional ventilating systems with heat added, usually with duct heaters.

In regard to service, the firm assured that any local heating contractor, who is experienced and competent in the handling of residential heating equipment, will understand and be able to service this schoolroom equipment. Because this Comfort Curtain system goes into public buildings, it is not distributed exclusively through the certified Lennox dealers.

"Simple and understandable" controls have been developed for the Comfort Curtain system that produce good results, it was stated. They are controls that the average electrician can wire easily and can understand, adjust, and service without difficulty, according to Lennox.

The thermostat used in each classroom is actually two separate thermostats: One control for "day," and one for "night." A manual switch converts from day to night operation. Control settings can be locked.

In all Comfort Curtain systems the blower operates constantly day and night, stopping only when the main switch is pulled in each room.

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Santa Clara County

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"A large number of our Air Armament Division customers are located in western states thousands of miles from our home office in Great Neck, New York. To avoid excessive liaison costs for western development work, we decided to establish a centrally located development facility in the western area. Santa Clara County seemed to fit this requirement best.

"In addition, the all-year mild climate and favorable labor conditions provided a combination of advantages we could not find elsewhere on the West Coast."

Why not talk to the people at Sperry, as well as other Santa Clara County industrialists? Their comments should quickly add up to a decision for this community at the southern tip of San Francisco Bay.

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SAN JOSE CHAMBER OF COMMERCE
Dept. 3, San Jose, Calif.

For more information about products advertised on this page use Information Center, page 14.

Winter Air Conditioning Fundamentals

Tips on Solving Noise Problems

By H. C. Gurney, Janitrol Div., Surface Combustion Corp.

We are all familiar with the trend towards installing the heating units with short or almost no heat or return ducts. And we have seen heating units installed in closets, alcoves, halls, attics, and crawl spaces—all directly above, below, or close to the living area.

These new locations, desirable to the builder because of the savings in space or cost, greatly increase the chance that the customer will complain about even slight noises which formerly were entirely unnoticed.

The installer has a greater responsibility for making the best possible installation and also checks and adjustments when the unit is originally started. Manufacturers, too, have a responsibility—to keep supplying you with quiet-operating equipment.

Usually the noises start at two sources. Either (1) from the mechanical portion of the equipment or (2) from the combustion system. Let's look at these sources of noise and see how they can be corrected. More often than not, the problem lies in the adjustment rather than in a defective piece of equipment.

BLOWER NOISE

Most of the blower noise complaints result from too tight an adjustment of the V-belt or a higher blower speed than necessary. The obvious correction is to follow the manufacturer's recommendations in the belt adjustment and the job requirements for blower speed. Naturally, CAC adjustment will give you not only the quietest blower operation but the most comfortable to your customer.

Noises coming from vibration between metal parts should be corrected by tightening the metal parts together with a metal screw, or by slightly moving the metal at the point of vibration to eliminate the contact.

Other possible noise sources could be a "rough" fan belt, a loose pulley or thrust collar on the blower shaft, a loose blower wheel on the blower shaft, motor and blower pulley not aligned, or even a loose motor pulley at the motor. In spite of all the manufacturer does to avoid such a condition, now and then it does happen, so don't overlook the possibility.

NOISES TRACEABLE TO COMBUSTION

Most of your combustion noises are those connected with oil burner operation, such as pulsation, chatter in oil lines, flame noise, pump squeal, etc.

In gas burning equipment, the noises are generally limited to an occasional slight ticking in the burner or the "snap" heard on opening and closing of an automatic gas valve on some units.

All these noises I have been talking about are sometimes intensified because of the building construction. Floors and ceilings or even walls can act as sounding boards, magnifying the noises and carrying them from their source to the living area. Usually you can't tell in advance when this particular noise amplification is going to happen, but to limit any such possibility, certain precautions can be taken.

(1) Flexible duct connections between the unit and the ductwork (material used must be acceptable to local authorities).

(2) Use of fiber-board of the insulating type as a base for the unit.

(3) Use of internal noise traps like acoustical insulation installed inside the ducts. Manufacturers of duct insulation can make recommendations on proper installations.

I have seen reports on equipment of almost all the manufacturers, and they all get noise complaints. There is one thing for certain—if we are to solve the problem of noise complaints in one-floor so-called ranch style homes, we must face the facts. The manufacturer, builder, the heating contractor, and the serviceman each has a responsibility, and they shouldn't pass the buck back and forth to each other.

It has been my experience that a large portion of these complaints come from supersensitive customers and are entirely unjustified. If your check proves that the equipment is operating at a normal noise level, then it should be definitely stated to the user that this is the conclusion of all three—the manufacturer, the builder, and the heating contractor.

If stalling and buck-passing occur among these three, the user will conclude that there *is* something wrong with the equipment and expect the impossible. Differences of opinion should be discussed and settled in private, and not before the user.

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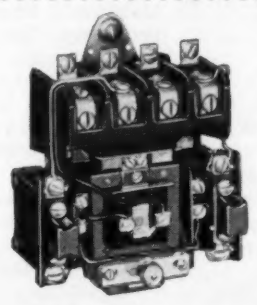
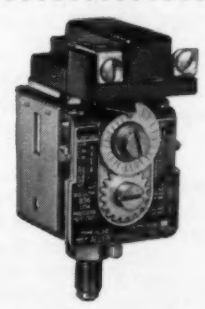
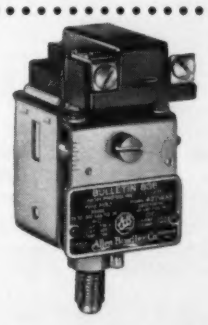


Bulletin 709 solenoid starter, with double break, silver alloy contacts, has only ONE moving part . . . no pins or bearings to corrode and stick. Reliable overload relays.

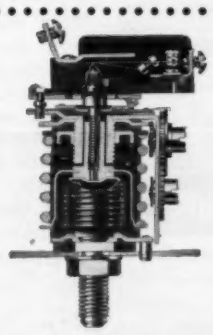


Bulletin 836 pressure switch for steam, air, water, and non-corrosive liquids and vapors, has range from 30 in. of vacuum to 700 psi. Built to industrial control standards.

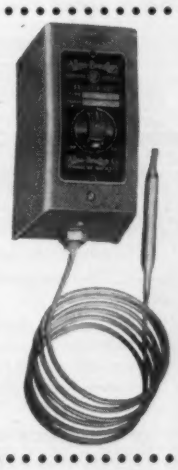


Adjustable high pressure cutout with range and differential adjustments. Snap action precision switch assures opening and closing of pilot circuit —instantly—without hesitation.

Low pressure cutout is available in 4 ratings: Type 1 has pilot duty rating; Type 2 has intermediate hp rating; Type 3 has a higher hp rating; Type 4 is for d-c operation.

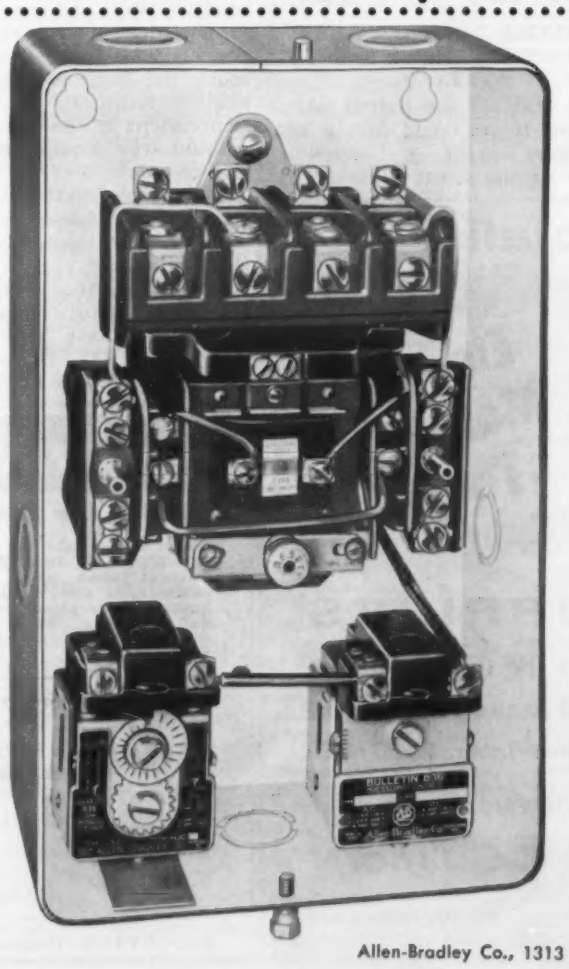


Gas, vapor, or liquid pressure expands the metal bellows against an adjustable spring. The same operating principle applies to both temperature and the pressure controls.



Bulletin 837 temperature control has a bulb containing a volatile liquid whose pressure increases with temperature. The pressure is transmitted to the bellows to open or close the contacts at the predetermined temperature setting.

A-B QUALITY



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For more information about products advertised on this page use Information Center, page 14.

Refrigeration Problems
And Their Solution
(*As Written by Paul Reed*)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Replacing the Compressor (2)

HOW TO FIGURE DISPLACEMENT

The volume or displacement of a cylinder is equal to the area of one end times the length of the cylinder. One end is a circle, and the area of this circle is its diameter (the bore) multiplied by itself (squared) then multiplied by 3.1416 (called "pi") and then divided by 4. The formula is: Area of the end equals Bore squared x 3.1416 divided by 4 or

$$\frac{\text{Bore}^2 \times 3.1416}{4}$$

After we have the area of one end of the cylinder, we multiply this by the stroke, which gives the volume of one cylinder.

The total volume of the compressor (which is its displacement for one revolution) is equal to the volume of one cylinder multiplied by the number of cylinders it has. This amount multiplied by the compressor r.p.m. is its Displacement at the speed at which it is running.

For example: What is the displacement of a 2-cylinder compressor bore 1¼ in., stroke 1⅛ in., running at 420 r.p.m.?

First: Area of the end of one cylinder is: $(1\frac{1}{4})^2 \times 3.1416 \div 4$ or $1\frac{1}{4} \times 1\frac{1}{4} \times 3.1416$ equals 4.908. $4.908 \div 4$ equals 1.227 sq. in.

Second: Volume of one cylinder is: Area of one end x 1⅛-in. bore. 1.227 sq. in. x 1⅛ equals: 1.38 cu. in., which is the volume of one cylinder.

Third: Volume of one cylinder x number of cylinders, or 1.38 x 2 equals: 2.76 cu. in., the displacement of the compressor for one revolution.

Fourth: Displacement per minute equals the displacement of one revolution of the compressor x r.p.m., or 2.76 x 420 equals 1,159.2 cu. in.

Fifth: The figure 1,159.2 is in cubic inches, whereas Compressor Displacement is usually expressed in cubic feet per minute (c.f.m.), so to convert the 1,159.2 cu. in. to cubic feet, we divide it by 1,728, which is the number of cubic inches in one cubic foot. The answer for $1{,}159.2 \div 1{,}728$ is .671 c.f.m. or just about two thirds of a cubic foot. (This is about the right displacement for a ⅛-hp. methyl chloride low temperature compressor.)

If we were calculating the displacement of this compressor for the purpose of selecting the r.p.m. of a compressor to replace it, we would not need to take step 5, and we could more easily make the comparison by cubic inches per minute than cubic feet per minute.

Let us suppose that this compressor throws a rod, or for some other reason has to be replaced. We find that we are unable to get an exact replacement, at least not in time. We can get a 2-cylinder compressor 1⅜-in. bore and 1⅜-in. stroke that will go on the base but we will have to bore some new mounting holes.

The question is: How fast should it run to give the same capacity, and what pulley sizes will it take to run it at that r.p.m.?

First, we must find the displacement of the new compressor in cubic inches per revolution. This will be

$$\frac{(1\frac{3}{8})^2 \times 3.1416 \times 1\frac{3}{8} \times 2}{4} = 4.08 \text{ cu. in.}$$

Second: If its displacement per minute must be 1,159 cu. in., then it must run at $1{,}159 \div 4.08$, or at 285 r.p.m.

HOW TO FIGURE NEW PULLEY SIZE

The old compressor had a 10-in. compressor pulley and a $2\frac{25}{64}$-in. motor pulley, so we figure that we could use the same compressor pulley and a smaller motor pulley, in order to reduce the compressor speed from 420 to 285 r.p.m., by means of the formula:

$$\text{Diameter of new motor pulley} = \frac{285 \times \text{dia. of old pulley}}{420} \text{ or}$$

$$\frac{285 \times 2.39}{420} = 1.621$$

This will require the use of a 1⅝-in. motor pulley. This is impractical, for the motor shaft is ⅝ in. so there would be only ½ in. left on each side for stock and belt groove. We find that we have to go to a 12-in. flywheel. Since the motor ran at 1,750 r.p.m., this means that with a 12-in. flywheel the motor pulley will have to be:

$$\text{Diameter of motor pulley} = \frac{\text{comp. r.p.m. x dia. or comp. pulley}}{\text{motor r.p.m.}}$$

or $\frac{285 \times 12}{1{,}750} = 1.953$ in. This is equal to a $1\frac{61}{64}$-in. motor pulley or we can use a $1\frac{15}{16}$-in. pulley.

SMALLER DISPLACEMENT COMPRESSOR MORE EASILY APPLIED

From this we see that it would be easier if we could find a new compressor with a somewhat smaller displacement than the old compressor. We may find that we cannot get a 12-in. compressor pulley on the base, and we may have considerable trouble finding a motor pulley as small as is necessary to reduce the compressor r.p.m. from 420 to 285.

A very suitable compressor would be a single-cylinder, bore $1\frac{7}{16}$ in., stroke $1\frac{7}{16}$ in. This has a displacement per revolution of 2.33 cu. in., so that at 500 r.p.m. it would give us the necessary displacement of 1,159 cu. in. per min. Also it would allow us to use a larger motor pulley with the same size (10 in.) compressor pulley.

Motor pulley to use with the $1\frac{7}{16}$ in. by $1\frac{7}{16}$-in. compressor, running at 500 r.p.m. $= 500 \times 2.39 \div 420 = 2.85$ in. or a $2\frac{27}{32}$-in. motor pulley.

In the above, we have calculated the displacements of the old and new compressors, for in some instances it will be necessary for the service engineer to do this. In many instances he will be able to find the displacements of the various compressors in the manufacturers' specifications, which will save him the trouble of calculating.

However, many times it is quicker and easier, if he can determine the bore and stroke of the compressors, to calculate the displacements rather than to spend the time hunting the specifications.

In any event, replacement compressors should have as nearly as possible the same displacement as the old compressors, and in the case of belt-driven compressors, this can be accomplished by properly proportioning the compressor and motor pulleys.

With direct-driven motor-speed hermetic units, it is an entirely different story. With these units it is usually necessary to use identical replacements, whatever the circumstances or consequences.

Now Representing...

Halstead & Mitchell—W. B. Knox of W. B. Knox Associates, Atlanta, will represent the firm in Georgia, Alabama, South Carolina, and Tennessee. He was formerly with Alco Valve Co. and Georgia Power Co. prior to formation of his own company last April.

Allied Products Div., Carrier Corp.—KENNETH W. COWEN, East Hartford, Conn., was appointed New England distributor for the company's mobile home air conditioning. Cowen has been a wholesale distributor of mobile home supplies for five years.

Bohn Aluminum & Brass Corp.—STANLEY B. KNAPP CO., Atlanta, will represent the Detroit firm in a seven-state area including Tennessee, Mississippi, Alabama, Georgia, South Carolina, North Carolina, and Florida.

NORTHWEST FACTORS, Seattle and Portland, Ore., will be the firm's Betz Div. representative in the Pacific Northwest. C. C. Yates is head of Northwest, C. C. Penn is in charge of the Portland office.

Gibson Refrigerator Co., Div. of Hupp Corp.—RY-BAR DISTRIBUTING CO., Portland, Ore., will represent Gibson in four counties of southern Washington and in all of Oregon except Malaheur county. D. H. Ryan is Ry-Bar president and sales manager.

W. L. ROBERTS, INC., Memphis, will serve as distributor for refrigerators, ranges, and freezers in 20 counties in western Tennessee, 24 counties in northern Mississippi, 13 counties in eastern Arkansas, two counties in southeastern Missouri, and eight counties in southwestern Kentucky. W. L. Roberts is president of the firm.

Manitowoc Equipment Works—Appointment of MORRISON-GREENE-SEYMOUR, INC., Milwaukee, to handle advertising, merchandising, and public relations was announced.

Air Duct Div., Wiremold Co. (Hartford, Conn)—Three new representatives have been appointed: PEARSALL CO., Detroit, Colo., to handle its products in Colorado and Wyoming; AIR PRODUCTS EQUIPMENT CO., Chicago, to represent the company in Illinois and Indiana; KENYON-BARSTOW CO., Boston, to cover Massachusetts, New Hampshire, Rhode Island, and Vermont.

United States Air Conditioning Corp.—Appointment of William C. McMichael and Michael H. Pelosi, Jr., trading as The Michael Co., Philadelphia, to represent UsAirco in the sale of packaged air conditioners and "Flo-Co" warm air furnaces has been announced.

Buensod-Stacey, Inc.—E. K. STRAHAN, Inc., New Orleans; H. DEWEY JONES CO., Columbus, Ohio; and GENERAL EQUIPMENT CO., Spokane, Wash. have been appointed sales representatives for dual-duct air mixing units and other products.

Ohio Electric Mfg. Co.—CHARLES N. RAPIPORT ASSOCIATES has been appointed national sales representative for the firm's line of motors for the oil heating industry. Rapiport offices are at 1057 Summit Ave., Jersey City, N. J., and 5400 Dunham Rd., Maple Heights, Ohio.

Bundy Tubing Co.—ATLANTIC TUBE & METALS, INC., Mountain View, N. J., has been appointed mill sales representative and warehouse stocking distributor in New York state and northern New Jersey for "Bundyweld" tubing and tubular specialties. T. L. Lee is president.

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Ask Utilities To Change Rules--

(Concluded from Page 1, Col. 3)

1-hp. motors to be installed on 230-volt lines. The rules prohibit their installation on 115-volt lines."

As air conditioning manufacturers are coming around to considering their products in terms of B.t.u. per hour rather than horsepower, the utility companies should be interested in running current rather than horsepower, Hills asserted.

NEW DEVELOPMENTS

"In continually striving for higher B.t.u.h. cooling capacity at low current draw, the room air conditioner industry has developed a ¾-hp. unit drawing only 7½ amperes at full load conditions, and a 1-hp. unit drawing 12 amperes at full load conditions. There are plans announced for 7½-ampere, 115-volt, 1-hp. and 12-ampere, 115-volt, 2-hp. room air conditioners.

"The National Electrical Code specifies that, on single outlet circuits, the full-load current of any appliance attached to the circuit should not exceed 80% of the fused capacity of circuit.

WOULD COMPLY WITH CODE

"This would mean that, for a single-outlet 115-volt circuit with No. 14 wire and fused for 15 amperes, a motor-driven appliance drawing 12 amperes could be applied to that circuit in full compliance with the National Electrical Code.

"However, a room air conditioner drawing only 12 amperes is not allowed on many utility company lines for the simple reason that the unit carries a frame-size designation of 1 hp.

"By review of electrical characteristics of 1957 models of room air conditioners, it can be found that there are some ¾-hp. room air conditioners on the market which actually draw more current than do some low ampere 1-hp. models.

"Yet utility companies will allow the higher ampere unit on 115-volt lines and will not allow the smaller ampere unit, because of obsolete requirements based on horsepower.

POTOMAC POWER REVISES RULES

"The Potomac Power Co. of Washington, D. C.," Hills continued, "recently revised its rules after the industry pointed out to PEPCO that the present tendency to reduce running current was making obsolete the utility regulations predicted on the nameplate ratings expressed in horsepower."

Hills pointed out that this ruling was announced last April and was included in the revised electrical code of the District of Columbia, which became effective last July 1. Details of the new ruling were published in the April 22 issue of the NEWS.

Hills said that a triple-joint committee consisting of representatives of Edison Electric Institute, the National Electrical manufacturers Association, and the Air-Conditioning & Refrigeration Institute is planning to discuss the situation at its next meeting.

"In the meantime," he suggested, "utility companies can contribute to the solution of the problem by reviewing their rules and making exceptions where strict application of horsepower limits appear inconsistent."

American-Standard Leader, Theodore E. Mueller, Dies

LOUISVILLE, Ky.—Theodore E. Mueller, 72, former chairman of the board of American Radiator & Standard Sanitary Corp., died here recently.

Long a leading figure in the plumbing and heating industry, Mueller served as president of the corporation from 1946 to 1953. He was named director emeritus in 1955 when he retired from the board of directors.

He had been ill since he suffered a stroke while presiding at an American-Standard stockholders' meeting back in 1953.

Compressors--

(Concluded from Page 1, Col. 2)

bodies for automotive air conditioning in the half-year period of 1957 totaled 302,502 against a figure of 167,487 for the first six months of 1956.

Two-horsepower compressor bodies shipped jumped from 47,047 in the first half of 1956 to 163,150 in the same period this year; in the 1-hp. size the gain was from 483,288 units in the 1956 period to 719,723 units this year. Smaller gains were shown in 1957 shipments of 7½, 10, 15, and 30-hp.-and-larger units.

June shipments of all types of compressor bodies (except for household refrigerators) totaled 343,769 units, compared with 459,722 in June a year ago, according to the report.

The 1957 figures, along with the names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

	Shipments Including Exports	
	June,	Jan.-June,
Horsepower*	**1957**	**1957**
⅙ & under	39,887	256,343
¼	63,687	416,628
⅓	21,147	127,325
½	10,677	57,057
¾	33,521	325,719
1	66,997	719,723
1½	15,442	179,255
2	21,024	163,150
3	10,428	66,247
5	8,706	49,906
7½	4,706	30,553
10	1,026	7,233
15	319	1,992
20	243	1,327
25	152	1,088
30 & over	749	3,855
Total	**298,711**	**2,407,381**
For Ammonia Refrigerant—Total	159	797
For Automotive Air Conditioning—Total	44,899	302,502
Grand Total	**343,769**	**2,710,680**

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning).

Reporting companies: Airtemp Div., Chyrsler Corp.; Bendix-Westinghouse Automotive Airbrake Co.: Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Airtemp Construction Revises National Marketing Setup Into 6 Separate Zones

DAYTON—R. B. Stotz, director of Airtemp Construction Div., Chrysler Corp., announced a major revision of the division's national marketing pattern.

According to Stotz, six new "zone" operations have been established to handle Airtemp Construction sales and engineering activities. Each zone will have its own headquarters, manager (a new post), and staff.

NEW ZONES, MANAGERS

The following is a list of the new zones and managerial appointments:

Northeast Zone — Headquarters, New York City; F. D. Halama, manager.

Southeast Zone — Headquarters, Atlanta; F. G. Kilburn, manager.

Mid-Central Zone—Headquarters, Chicago; R. M. Hagan, manager.

Southwest Zone — Headquarters, Dallas; W. F. Jeffers, manager.

West Coast Zone—Headquarters, Los Angeles; manager to be named.

North-Central Zone — Headquarters, Dayton; J. V. Weigle, manager.

Airtemp Construction Div.—as separate from the Airtemp Div. of Chrysler—works specifically with mechanical contractors and specializes in what is termed "heavy duty" air conditioning equipment.

Products marketed by Airtemp Construction include: 25 to 100-ton direct expansion "packaged" air conditioners; "packaged" water chillers—both reciprocating and centrifugal types: reciprocating compressors—15 to 125-hp.; air handling units (central station type); evaporative condensers; cooling towers; fan coil units and auxiliary equipment.

'DEMAND FOR LARGER UNITS GOOD'

Announcing the new zone setup, Stotz asserted, "The demand for industrial-type, heavy-duty air conditioning equipment has been on the rise for the past several years.

"Big air conditioning projects—of the type with which we are concerned—are planned a year or more in advance and a considerable number are on the board at the present time. Then, also, the new 125 to 500-hp. centrifugal water chillers introduced by Airtemp Construction earlier this year have been very well received.

"We are, therefore, establishing this new pattern of market coverage to handle more expeditiously current business and a greater volume of future business."

Reprints Available

Hermetic Compressor Design, Development, by Henri Soumerai. Only 40¢ each.

Mail this ad with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

ASRE Plans Meeting Program--

(Concluded from Page 1, Col. 3)

Industry at the International Amphitheatre in Chicago Nov. 18-21, the ASRE meeting will combine a program of social activities with informative sessions, it was announced. Committees will convene on Tuesday and Wednesday, Nov. 12-13.

First technical session on "Thermal Conductivity Apparatus for Operation Near Room Temperature," "Removal of Ice Film from Metal Surfaces," and "Influences of Insulation on Moisture Condensation Aspects of a Steel Framed Cold Storage Warehouse Structure" will start at 9:30 Thursday morning, Nov. 14.

DOMESTIC REFRIGERATOR ENGINEERING CONFAB

At the same time ASRE will hold a domestic refrigerator engineering conference at which speakers will cover methods of using aluminum for both tube-in-sheet and tube-on-sheet practice.

Second technical session opens at 2:30 Thursday afternoon. Papers on "Greenhouse Climate Control" and "A Simple Moisture-Indicating Device for Refrigerating Systems" are set for the session. During the same period and at 4 and 7 p.m. refrigeration and meat packing conference committee meetings will be held.

Air conditioning conference opens at 9 Friday morning, Nov. 15, to cover "Central System Air Conditioning for Large Buildings." Food preservation conference on "The Present and Future Outlook for Food Preservation" will be held at the same time.

6 FORUMS

There will be six forums at 1:30 that afternoon on such themes as refrigeration in candy manufacture, automatic operation of refrigerating plants, the part ASRE can play in industry to encourage interest in refrigerating engineering education, problems of correct installation of residential air conditioning, and small truck refrigeration equipment.

For those who have made reservations in advance, 1:30 is the time for the Argonne Laboratories inspection trip also. Committee meetings are set for 2 p.m.

At 8:30 Saturday morning, Nov. 16, committee meetings are again programmed and the third technical session opens at 9. "Hermetic Motor Speed Indicator," "Permeability of Plastic Films to Refrigerant-12 and Nitrogen," and "Air Cycle Air Conditioning for the B-47" will be discussed. Council luncheon-meeting convenes at 12:30 p.m.

Featured speaker at the Welcome Luncheon on Nov. 14 will be President Alvin J. Blake of the Chicago Technical Societies Council.

Do you need a better source for large refrigeration and air conditioning control valves
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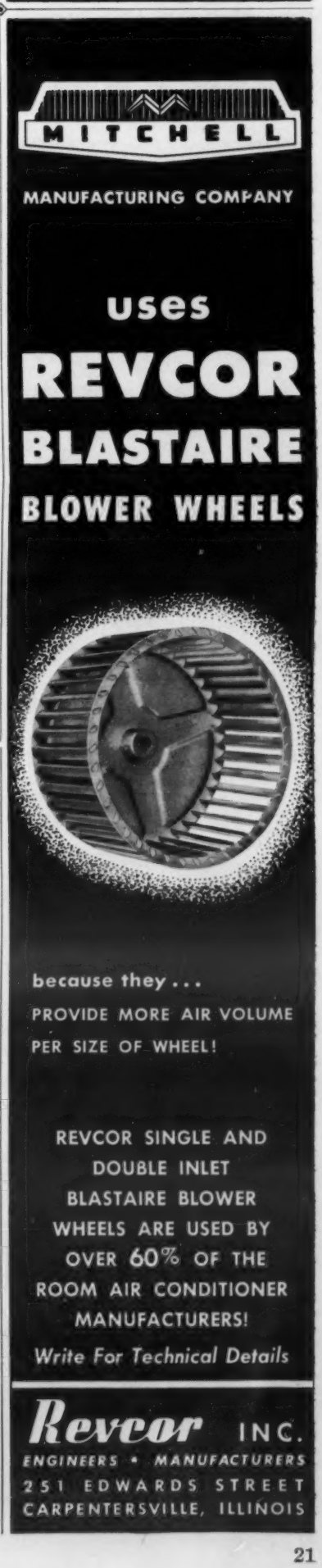


CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

ADVERTISING SALES promotion manager who sells—Let me triple your $ returns with my 3-way ad plan! 16 years' creative-administrative experience. Heavy on dealer-distributor promotions; direct mail; trade shows, national cooperative advertising campaigns; productionwise; agency liaison. Background: Typhoon. Contact: BYRON STONE, 81 State Street, Brooklyn, New York.

A PROGRESSIVE refrigeration and air conditioning executive engineer desires new opportunity. Experienced in the development of package air conditioning and refrigeration units including components from the design conception to the finished product. Write, giving details. BOX A5875, Air Conditioning & Refrigeration News.

MANUFACTURING PRODUCTION and purchasing executive, with more than 25 years' experience in refrigeration and appliance unitary equipment and components, seeks new position. Has been operating recently as purchasing official and administrative assistant to manager of manufacturing and purchasing. Earlier experience includes plant operation, inspection administration, and service department administration. Age 52. Married, no family. Will relocate anywhere if job is right. BOX A5881, Air Conditioning & Refrigeration News.

WANT JOB as commercial refrigeration service or service manager—Anyplace Middle West. 15 years' experience—Own new truck, all tools and testing equipment. Will relocate on 30 day trial basis for existing hourly scale if job will guarantee year round work. BOX A5889, Air Conditioning & Refrigeration News.

BRANCH — DISTRICT or territory manager, sales and application engineer. 7 years' experience selling, schooling and setting up dealers on heat pumps, regular air conditioning, heating, commercial or residential. Factory to wholesaler or factory direct. High sales volume, top reference and resume available, will relocate, travel. Available at once. BOX A5890, Air Conditioning & Refrigeration News.

AVAILABLE NOW—High caliber man familiar with all phases of sales management. Have been a D.M. for 8½ years with national manufacturer of commercial refrigeration, air conditioning, heating and other refrigerated products including appliances. Residing in Michigan, but will travel three state area. Complete resume with top references available. BOX A5895, Air Conditioning & Refrigeration News.

AIR CONDITIONING sales and service engineer. 11 years' experience in sales, application, technical training and service on residential and automobile air conditioners at manufacturer and distributor level. Desires position with manufacturer. Age 33. Willing to relocate in Midwest or Western area. BOX A5896, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

REGIONAL SERVICE representative: Acme Industries, Inc. needs an alert, enthusiastic, sales-minded regional service representative who has proven experience and knowledge in commercial and industrial air conditioning and refrigeration equipment. This position is an outstanding opportunity for the right person. Write, giving full details of your background and experience to Jack J. Bacsik, Service Manager, ACME INDUSTRIES, INC., Jackson, Michigan. All replies held in strictest confidence.

SALESMEN! MANUFACTURER'S representatives. Many good territories available, sell ACI air conditioners, heat pumps, packaged chillers, cooling towers, air cooled condensers, remote air conditioners, ceiling mounted air conditioners, condensing units, etc. Greatly expanded line for 1958. Large booth at ARI Chicago Show. Applications now being considered, excellent opportunity due to new plant and expansion of products. Write, wire or telephone, Pete Hatcher, Sales Manager; AMERICAN COILS CO., Route 524, Farmingdale, New Jersey.

SALES ENGINEER—To call on industrial, mechanical contractors and commercial refrigeration accounts, having experience in air conditioning and refrigeration sales, application and design. Send resume, including experience and earnings in confidence to: J. GEO. FISCHER & SONS, INC., 2115 Rust, Saginaw, Michigan.

WANTED EXPERIENCED commercial refrigeration and air conditioning serviceman. Top compensation in line with applicant's ability. Year-round employment assured for good man. Service truck furnished. Give experience, references, phone number with application. MAKSYM REFRIGERATION ENGINEERS, 8238 Woodward, Detroit 2, Mich.

AIR CONDITIONING engineer—Indiana manufacturer needs air conditioning engineer with design and test experience on central unit types. Salary open. Paid group insurance, vacation and other benefits. Send resume to Mr. Williams, PEERLESS CORPORATION, 1853 Ludlow Avenue, Indianapolis, Indiana.

HEATING ENGINEER—Indiana manufacturer has opening for experienced heating engineer. Excellent growth opportunity for man with experience in gas and oil furnace design and testing. Salary open. Paid group insurance, vacation and other benefits. Send resume to Mr. Meyer, PEERLESS CORPORATION, 1853 Ludlow Avenue, Indianapolis, Indiana.

CHIEF DRAFTSMAN—Indiana heating-cooling manufacturer needs experienced draftsman to lead department. Must have machine design knowledge. Air conditioning or heating experience will be helpful. Good salary and employee benefits. Send resume to Mr. Williams, PEERLESS CORPORATION, 1853 Ludlow Avenue, Indianapolis, Indiana.

WANTED: MANUFACTURER'S agents, distributors, and dealers Midwest and Northeast for high capacity air-cooled remote air conditioning line. We can sell all equipment for 3 tons of cooling with central heat as low as $599.00. NATCO, P. O. Box 7464, Houston, Texas.

COMMERCIAL REFRIGERATION representative for Ohio, Indiana, West Virginia. Must be experienced in field work, or have successful background selling commercial refrigeration. Draw, expenses. Firm well known in territory. Send complete details about experience, firms represented, present activities and reference. All held in strict confidence. BOX A5891, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE: One new 50 ton G. E. compressor and condenser. $1,000.00 below distributor cost. Write ACE FURNACE AND METAL WORKS, 4439 Greenville Avenue, Dallas, Texas.

SURPLUS LOT of Tecumseh sealed in unit ¾ h.p. compressors. 230 volt, 208 volt and 115 volt, single phase. Freon gas used. All new material from termination contract. We will sell at substantial discount from original price. Write, wire or phone. G. & M. MATERIALS CO., 12955 Hamilton Avenue, Detroit 3, Mich., TOwnsend 8-6839.

NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment — Repair parts available all models Baker ammonia and Freon compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning, and allied equipment. THE KEISER COMPANY, Paul Building, Utica, New York.

WATER CHILLERS, 2, 3, and 5 h.p., air-cooled and water-cooled, 230 volt, 1 or 3 phase, original crates, with controls. ⅓, 1, 1½ and 2 ton fan coils for chilled water, 115-60-1, with and without cabinets and filters. Substantially below jobber cost. Write for specifications and prices. BOX A5871, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

CAPITAL WANTED or sale—Refrigeration and air conditioning wholesaler seeks capital for expansion. Would also consider outright sale. Business is well established in an excellent trading area in the east. Write BOX A5892, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

PATENTS

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Copies should be ordered by number and title and a mention of the fact if they are either Designs or Reissues.

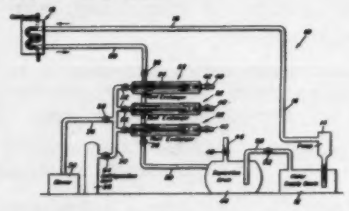
Address orders to: Commissioner of Patents, Washington 25, D. C.

Week of August 20

2,803,116. REFRIGERANT DISTRIBUTOR. Ralph B. Tilney, Clayton, Mo., assignor to Alco Valve Co., St. Louis.

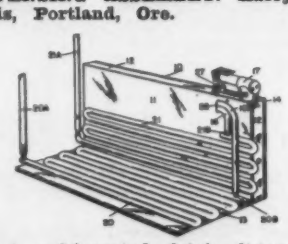
3. A multioutlet distributor for refrigerants, comprising: a body having a refrigerant inlet, the walls of which converge smoothly and continuously in the direction of flow to form a constricted throat, through which the refrigerant may be forced at greatly increased velocity over that at the inlet; and a plurality of outlet passages emanating from and diverging from the throat, the walls of the passages merging smoothly and continuously into the walls of the throat.

2,803,117. REFRIGERATED AIR WATER COOLING SYSTEM. Dale C. Coil, Vivian, La.



1. A water cooling system comprising a water supply chamber, a water pipe leading from said chamber to an apparatus to be cooled, a return conduit leading from the cooled apparatus, a separation device connected to said return conduit, a conductor extending from said separator to said supply basin, air conducting members in heat exchange relation with said return conduit, an air cooler, valve controlled means conducting air from said air cooler through said heat exchange members, and means to control the discharge rate of air from said members.

2,803,118. REFRIGERATED DRINK DISPENSING ASSEMBLY. Harry H. Lewis, Portland, Ore.



6. A refrigerated drink dispensing assembly including a double dispensing faucet, a pair of flexible tubes of identical size connected to said faucet, a closed refrigerated housing for said tubes, said housing having a main side wall, a companion wall, end walls, and top and bottom walls, the spacing between said main wall and said companion wall inside said housing being only slightly greater than the external diameter of said tubes, said main wall formed of material having high heat conductivity, said main wall having an inlet opening into said housing for said tubes, curved guideways in said housing near the bottom corners for said tubes, said housing having an outlet passageway in the top of one end for said tubes, a socket on said housing above said outlet passageway for supporting said faucet when said faucet is not in use, a curved stop in said housing below said inlet opening limiting the extent to which said tube can be withdrawn through said outlet passageway when said dispensing faucet is lifted from said housing, a cooling coil for the liquid dispensed through one of said flexible tubes carried by said main wall, the intake end of said coil connected to a source of liquid under pressure, the outlet end of said coil connected with said last mentioned flexible tube. . . .

WANTED

MANUFACTURER'S AGENT

To handle well-established line of refrigeration components in a territory comprised of Texas, Oklahoma, Arkansas, and Western Louisiana.

Forward full information to BOX A5893, Air Conditioning & Refrigeration News.

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.
3 Items of ICE CREAM CABINETS, mechanically refrigerated, Mil Spec. MIL-I-0020565B—31 each.—IFB 165B—Bid Opening 7 Oct. 57.

National Guard Bureau, U. S. Property and Fiscal Office for Pennsylvania, Annville Rd. No. 2, Pa. Phone, Lebanon 2-6661, Ext. 23 or 24.
INSTALLATION OF THREE NEW OIL FIRED FORCE WARM AIR HEATING UNITS, Indiantown Gap Military Reservation, Pa.—Job—IFB not furnished—Bid Opening 7 Oct. 57—Bid Sets available 13 Sept. 57. Deposit $5.

QM Purchasing Agency, Columbus General Depot, Columbus 15, Ohio.
REFRIGERATOR, MECHANICAL HOUSEHOLD, Interim Fed. Spec. AA-R-00211D (Army, QMC)—1,694 ea.—IFB 176B—Bid Opening 11 Oct. 57.

QM Purchasing Agency, Columbus General Depot, Columbus, Ohio.
The following 5 items are procured under IFB 58-202B—Bid Opening 23 Oct. 57. REFRIGERATOR, PREFABRICATED WALK-IN (Box Only) without refrigerating equipment, 24′ x 10′ (1,310 cu. ft.)—Mil Spec. MIL-R-10137C, 19 ea.—CONDENSING UNIT, Air Cooled semi-hermetic or open type complete with controls 1½ Hp. minimum 10,650 B.t.u. per hour, 220 volts, 60 cycles, single phase, Mil Spec. MIL-R-10137C 122 ea.—CONDENSING UNIT, Air Cooled semi-hermetic or open type complete with controls, 1 Hp. minimum 7,850 B.t.u. per hour, 220 volts, 60 cycles, single phase, Mil Spec. MIL-R-10137C, 38 ea.—COOLER UNIT, with expansion valve and heat exchanger, 10,650 B.t.u. per hour, 110 volts, 60 cycles, single phase, Mil Spec. MIL-R-10137C, 122 ea.—COOLER UNITS, with expansion valve and heat exchanger refrigerator, 7,850 B.t.u. per hour, with 110 volts, 60 cycles, single phase, Mil Spec. MIL-R-10137C, 38 ea.

NAVY

Navy Purchasing Office, 4th and Independence Ave., S.W., Washington, D. C. Attn.: SPF-1A.
FANS, VENTILATION, Type C, high pressure centrifugal, fixed, 150 c.f.m., complete with motors and controllers per Spec. MIL-F-19004(Ships), dated 30 August 1955 and requirements set forth in Invitation—The material under this Specification is of a type on the Qualified Products List—61 ea.—IFB 600-228-58-S—Bid Opening 9 Oct. 57.

Officer In Charge of Construction, Naval Air Station, Jacksonville, Fla.
MODIFICATION TO AIR CONDITIONING, Building No. 414, Naval Air Station, Jacksonville, Fla.—Job—IFB 13825/57—Bid Opening 10 Oct. 57.

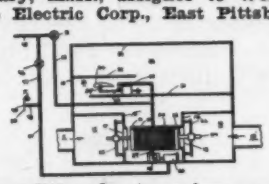
GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 5, 575 U. S. Courthouse, 219 So. Clark St., Chicago, Ill.
INTERIM AIR CONDITIONING, Courtroom and Judge's Suite, USPO & Courthouse, Dayton, Ohio—Job—IFB D&C 636—Bid Opening 10-2-57.

General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta, Ga.
CENTRAL AIR CONDITIONING SYSTEM etc.; Pensacola, Fla. Post Office and Court House—Job—IFB CR4-(08-078)—Bid Opening 10-18-57.

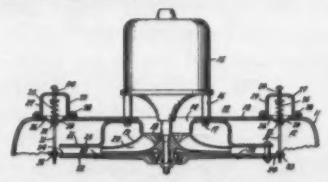
General Services Administration, Region 5, 575 U. S. Courthouse, 219 So. Clark St., Chicago, Ill.
COOLERS, Fed. Spec. OO-C-566c—30 ea.—IFB CHN-2550—Bid Opening 10-9-57.
COOLERS, Fed. Spec. OO-C-566c—572 ea.—IFB CHN-2537—Bid Opening 10-15-57.
Partial set aside for Small Business Firms only

2,803,261. VELOCITY RESPONSIVE CONTROLS. Raymond L. Carlson, West Roxbury, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh.



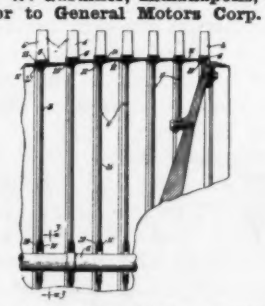
A conditioned air volume control comprising means forming a conditioned air passage and a pair of oppositely disposed ports for admitting air into said passage, a pair of dampers facing said ports, a bellows for moving, when inflated, said dampers towards said ports, an airfoil section pivoted in said passage in the path of the air flowing therethrough, means using air under pressure and including a compressed air supply and a supply pipe for inflating said bellows, a compressed air bleed port connected to said pipe, and means movable with said airfoil section for varying the volume of air bled from said bleed port.

2,803,396. COMPRESSOR. Kenneth A. Darrow, Sprakers, N. Y., assignor to General Electric Co.



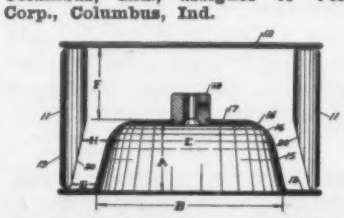
1. A compressor comprising a casing wall, an impeller within said casing wall, a vaneless diffuser with spaced walls positioned adjacent the periphery of said impeller, a flexible member positioned adjacent one of the walls within said diffuser, said member secured to its associated wall near the periphery of said impeller, and means to flex said member in response to pressure variations within said casing, said means comprising a rod connected to the free end of said flexible member, a diaphragm positioned in said casing wall and connected to said rod, and biasing means to return said annular member to its unflexed position.

2,803,397. COMPRESSOR WHEEL. Arthur W. Gardiner, Indianapolis, Ind., assignor to General Motors Corp.



1. A composite blade supporting wheel structure comprising a disk having an outer peripheral surface and oppositely disposed substantially vertical side surfaces, one of said side surfaces having a spirally threaded portion, a ring forming a part of said composite wheel structure, said ring having a spirally threaded complementary surface to said one side and having the crests of its threaded surface mating with the roots of the threaded portion of said one of said side surfaces, said crests and said roots when in engaging relation fixing said ring to said disk against relative radial and rotary movement with respect to each other, and means fixing said disk and said ring against axial movement whereby said ring and disk forms a thickened blade supporting rim portion.

2,803,398. CONVEX BACK PLATE BLOWER WHEEL. Verner E. Sprouse, Columbus, Ind., assignor to Vernco Corp., Columbus, Ind.



1. A cylindrical blower wheel having a plurality of circumferentially spaced apart blades extending by straight line outer edges along the periphery of the wheel and parallel to and at common radii from the axis of rotation of the wheel; a back plate engaging rear ends of said blades and protruding by a right line frusto-conical central portion within and radially spaced from inner edges of said blades; an annular, approximately planar portion of said plate extending between said blade rear ends and said plate portion; said blades having inner straight edges extending from forward ends substantially parallel to said axis and to a plane normal to said axis approximately at the forward end of said plate portion, and from which plane said blade inner edges each extends in a straight line diagonally from said plane to said blade rear ends defining an annular space approximately fixed in radial width between those diagonal lines and the periphery of said plate portion.

(To Be Continued)

For more information about products advertised on this page use Information Center, page 14.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Airtemp unit is the seventh make to be discussed in the current series on automobile air conditioners. Makes previously described in this series were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, and Mark IV. Several more makes by "independent" manufacturers will be reviewed in future instalments, following which units of most automobile manufacturers themselves will be described.

Models discussed in the current series are 1956 and/or 1957. For data on earlier models readers are referred to the original series of articles, which is available now in the handy manual, *Servicing Automobile Air Conditioners.*

Airtemp (3)

Airtemp Div.
Chrysler Corp.
Dayton 1, Ohio

Checking Superheat

Thermostatic expansion valve employed on the Airtemp 1957 system is designed to operate on approximately 15° F. superheat. Although the superheat setting of the valve cannot be changed in the field, the superheat setting can be checked to determine if it is correct.

One way of checking the superheat setting of the expansion valve is to operate the system with a suction gauge connected to the suction service valve and an accurate thermometer attached to the suction line as close to the evaporator outlet as possible. A cloth should be wrapped around the lower part of the thermometer and the suction line to prevent surrounding air temperature from affecting the reading.

The system should be operated for 10 minutes or so before taking readings of the suction pressure and the suction line temperature.

Subtracting the temperature corresponding to the observed suction pressure (as shown on a Refrigerant-12 pressure-temperature chart) from the temperature shown on the thermometer will give the superheat, which should be approximately 15° F.

Checking Thermostat

If the clutch does not engage with blower on and thermostat (on later 1957 units) set at "Cooler" position, the thermostat or magnetic clutch or wiring to clutch may be defective.

If the clutch engages when a jumper wire is placed across the terminals of the thermostat (accessible by removing the center air grille on face of evaporator case), the thermostat is defective and has to be replaced.

The blower switch must be turned on to check the thermostat and clutch circuit.

Checking Clutch

If a voltmeter shows that current is being supplied to the magnetic clutch but the clutch does not operate, then (1) the brushes in the clutch are worn and/or are not contacting the collector rings properly, or (2) if the brushes and contacts are okay, the clutch is defective and must be replaced.

Adjusting Hot Gas By-Pass Valve

Hot gas by-pass valve employed on early 1957 Airtemp systems is factory set to start opening (and by-passing hot gas into the evaporator) at a 30° F. coil temperature and to be completely open at 26° F.

If evaporator icing is encountered, operating temperature range of the valve can be raised by turning the adjustment screw in one or two turns. If the coil temperature is too high because the by-pass valve opens too soon, operating temperature range can be lowered by turning the adjustment screw on the valve out a turn or two.

Trouble Chart

The following list of symptoms and possible causes will be helpful in diagnosing service complaints on the 1957 Airtemp unit.

Blower not operating.
1. Open circuit in wiring.
2. Switch defective.
3. Motor defective.

No cooling with blower and compressor operating.
1. Condenser air passages clogged.
2. Shortage or loss of refrigerant.
3. Expansion valve defective.
4. Compressor defective.

Compressor fails to run.
1. Driving belt broken.
2. Blower switch defective.
3. Thermostat defective.
4. Loose electrical connections.
5. Magnetic clutch brushes or clutch defective.

Low suction pressure with low head pressure.
1. Shortage of refrigerant.
2. Liquid line restricted.
3. Expansion valve defective.

High head pressure.
1. Condenser air passages clogged.
2. Air in system.
3. Too much refrigerant.

Low suction pressure with normal head pressure.
1. Liquid line or suction line restricted.
2. Expansion valve defective.
3. Shortage of refrigerant.
4. Too much oil in system.
5. Service valves partially closed.

(Next make to be discussed will be Mobilette. manufactured by Mobil-Aire Mfg. Co. of Denison, Texas.)

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

Air Conditioning and Refrigeration News published weekly at Detroit, Michigan for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Business News Publishing Company, Detroit, Michigan.

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Managing editor, Phil B. Redeker, Detroit, Michigan.

Business manager, Edward L. Henderson, Birmingham, Michigan.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

21,731.

Phil B. Redeker,
Managing Editor

Sworn to and subscribed before me this 26th day of September, 1957.

[SEAL] James W. Draper
Notary Public, Wayne County, Michigan
(My commission expires July 29, 1959.)

2 Hupp International Executives Studying Foreign Facilities

CLEVELAND — Donald S. Smith and Roy Scantlebury, president and vice president, respectively, of Hupp International division of Hupp Corp., left Cleveland recently for an extensive visit to the countries of Venezuela, Colombia, Panama, and Mexico.

They will be visiting their Gibson Refrigerator, Perfection Industries, and Typhoon Air Conditioning divisional distributors in addition to inspecting the manufacturing facilities of licensees producing several types of Hupp Corp. products in these areas.

A study of new manufacturing operations and facilities will also be made by the executives during the trip, according to the announcement.

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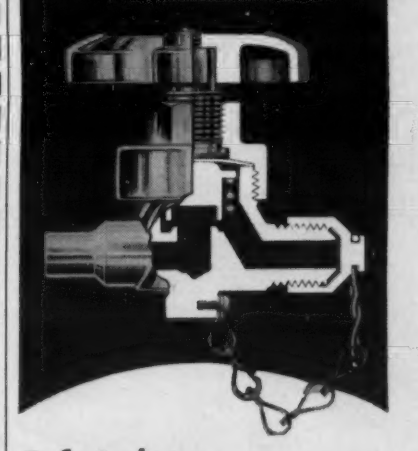
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Room Unit Mfrs. Agree on Ratings--

(Concluded from Page 1, Col. 4)

ers, and to make ratings on their various models available to ARI for publication in press releases, brochures, and otherwise.

They agreed that the ratings on each model would be made available within 30 days after the first production models are shipped from the factory.

The rating program was adopted in September, 1956, in a move to give purchasers of room units a yardstick by which to judge performance of the equipment. It provides for testing and rating of conditioners in accordance with provisions of ARI Standard 110-56 which sets a rigid formula under which ratings of the units of various manufacturers are comparable since all are tested under the same prescribed conditions.

"We believe that the ARI testing and rating program for room air conditioners has been successful in its first year, particularly from the standpoint of the consumer," Geo. S. Jones, Jr., managing director of ARI, said in making the announcement. "No longer must he base his judgment on 'tons' and 'horsepower' in making a selection; instead he has a definite measure of capacity to use as a reference point.

"Now, as the program is about to enter its second season, we hope that the few small problems we had in its first year of operation will be ironed out. Most of the makers are solidly behind it, and we hope to have 100% backing of all major manufacturers in the 1958 season."

Exemplary of the program's success, Jones pointed out, is the fact that the National Better Business Bureau has recommended, and local Better Business Bureaus in many cities throughout the country have adopted, a set of standards for advertising and selling room air conditioners which requires publication of the capacity rating in B.t.u., "as tested and rated in accordance with ARI Standard 110-56."

NCRSA Plans Meeting Program--

(Concluded from Page 1, Col. 4)

At the opening session on Monday morning, Nov. 18, President S. W. Davis, Jr. and Vice President Harry A. Hattenbach will talk on different phases of distributors' responsibilities and what NCRSA can provide.

Henry Haase, president of York Corp., will explain why the firm sells through distributors and how they are chosen. Verne Martin, nationally-known sales consultant and former general sales manager of The Maytag Co., will speak on "Men Make the Difference." He will tell how Maytag built and maintained an effective sales force.

A panel presentation on "The Store of Tomorrow" will highlight the afternoon session. Panelists include Ralph E. Ernst, architect and designer of modern stores for the National Association of Retail Grocers; A. B. Biddle, executive vice president of Hussmann Refrigeration, Inc.; and NCRSA Vice President Milton Schwartz.

Tuesday morning's session will hear a talk by Past President George Wiedemer on "Put ting Life in the Product—the Distributors' Responsibility." NCRSA Director George Lucas will tell how the salesman can do more to promote the services of distributors.

"Crystal Balls, Witchcraft and Hot Coffee" is the subject of a talk to be given by Karl O. Nygaard, director of research, B. F. Goodrich Co.

The final session Tuesday afternoon will feature a panel discussion in which distributors will suggest what they would do "If I Were A Manufacturer." Panelists will include Dudley M. Cawthon, Dudley M. Cawthon Co.; Ray H. Winther, Ray Winther Co.; George Schoenbacher, Red-E-Cold Refrigerator Co.; and Jack Thurman, Pritchett-Stephen Refrigeration Co.

A ladies program, beginning with a coffee hour at 9:30 a.m. Monday, will include Puppet Grand Opera at the Kungsholm restaurant, tickets to Don McNeill's Breakfast Club broadcast on Tuesday, followed by a visit to the Merchandise Mart. Ladies will also take part in the annual reception and dinner.

Detroit Heating Men To Hear Merchandising Talk Oct. 10

DETROIT—Hal Chamberlin of Minneapolis-Honeywell Regulator Co. will talk on "Merchandising Today—Who Cares?" at the Thursday, Oct. 10 meeting of Detroit Warm Air Heating Association in the Fort Shelby hotel.

G-E Ups 3 Refrigerator Model Prices 3-4%

LOUISVILLE, Ky. — Factory prices on the first three 1958 model General Electric Co. refrigerators have been raised 3-4%, W. M. Timmerman, general manager of the household refrigerator department, announced.

Increases apply to two 8-cu. ft. models and one 10-cu. ft. unit. G-E officials declined to say if other price increases are being readied for other refrigerator models and other major appliances.

"Current refrigerator prices for equivalent models are the lowest they have been since 1947," Timmerman said. "We absolutely had to raise them. Earnings otherwise just will not be sufficient."

Citing two examples of what he called today's "bargain," Timmerman said in 1947 a 6-cu. ft. refrigerator retailed for $189.95 and today an 8-cu. ft. unit retails as low as $149.95.

Again, in 1947, he added, an 8-cu. ft. two-door combination refrigerator-freezer retailed for $399.95 but today a 12-cu. ft. combination retails for $360.95.

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